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WE ARE once more unlocked from the chilling embraces of the Ice-King! APRIL, full of soft airs, balm-dropping showers, and fitful gleams of sunshine, brings life and animation to the millions of embryo leaves and blossoms, that, quietly folded up in the bud, have slept the mesmeric sleep of a northern winter—APRIL, that first gives us, of the northern states, our proper spring flowers, which seem to succeed almost by magic to the barrenness of the month gone by. A few pale snowdrops, sun-bright crocuses, and timidly blushing mezereums, have already gladdened us, like the few faint bars of golden and ruddy light that usher in the full radiance of sunrise; but APRIL scatters in her train as she goes out, the first richness and beauty that really belong to a temperate spring. Hyacinths, and daffodils, and violets, bespread her lap and fill the air with fragrance, and the husbandman beholds with joy his orchards gay with the thousand blossoms—beautiful harbingers of luscious and abundant crops.

All this resurrection of sweetness and beauty inspires us with a desire to look into the *Flower Garden*, and to say a few words about it, and the flowers themselves. We trust there are none of "our parish," who, though they may not make flower gardens, can turn away with impatient or unsympathising hearts from flowers themselves. If there are such, we must, at the very threshhold of the matter, borrow an homily for them from that pure and eloquent preacher, MARY HOWITT:—

> "God might have made the earth bring forth
> Enough for great and small,
> The oak tree and the cedar tree,
> Without a flower at all.
>
> Our outward life requires them not—
> Then wherefore had they birth?
> To minister delight to man,
> To beautify the earth.
>
> To comfort man, to whisper hope
> Whene'er his faith is dim;
> For whoso careth for the flowers,
> Will much more care for him!"

Now, there are many genuine lovers of flowers who have attempted to make flower-gardens—in the simplicity of their hearts believing it to be the easiest thing in the world to arrange so many beautiful annuals and perennials into "a living knot of wonders,"—who have quite failed in realizing all that they conceived of, and fairly expected, when they first set about it. It is easy enough to draw upon paper a pleasing plan

of a flower-garden, whether in the *geometric*, or the *natural*, or the "*gardenesque*" style, that shall satisfy the eye of the beholder. But it is far more difficult to plant and arrange a garden of this kind, in such a way as to afford a *constant succession* of beauty, both in blossom and leaf. Indeed, among the hundreds of avowed flower gardens, which we have seen in different parts of the country, public and private, we cannot name half a dozen which are in any considerable degree *satisfactory*.

The two leading faults in all our flower gardens, are, the *want* of *proper selection* in *the plants themselves*, and a *faulty arrangement*, by which as much surface of *bare soil meets the eye* as is clothed with verdure and blossoms.

Regarding the first effect, it seems to us that the entire beauty of a flower garden almost depends upon it. However elegant or striking may be the design of a garden, that design is made poor or valueless, when it is badly planted, so as to conceal its merits, or filled with a selection of unsuitable plants, which, from their coarse or ragged habit of growth, or their remaining in bloom but a short time, give the whole a confused and meagre effect. A flower garden, deserving the name, should, if possible, be as rich as a piece of embroidery, during the whole summer and autumn. In a botanical garden, or the collection of a curious amateur, one expects to see *variety of species*—plants of all known forms, at the expense of every thing else. But in a flower garden, properly so called, the whole object of which is to afford a continual display of beautiful colors and delicious odors, we conceive that every thing should be rejected, (or only most sparingly introduced,) which does not combine almost perpetual blooming, with neat and agreeable habit of growth.

The passion for novelty and variety among the lovers of flowers, is as great as in any other enthusiasts. But as some of the greatest of the old painters are said to owe the success of their masterpieces to the few colors they employed, so we are confident the most beautiful flower gardens are those where but few species are introduced, and those only such as possess the important qualities we have alluded to.

Thus among flowering shrubs, taking for illustration the tribe of *Roses*, we would reject, in our choice flower garden, nearly all the old class of roses which are in bloom for a few days and but once a year, and exhibit during the rest of the season, for the most part, meagre stems and dingy foliage. We would supply their place by Bourbons, Perpetuals, Bengals, etc., roses which offer an abundance of blossoms and fine fresh foliage during the whole growing season. Among *annuals*, we would reject every thing short lived, and introduce only those, like the *Portulaccas*, *Verbenas*, *Petunias*, *Mignonette*, *Phlox Drummondii*, and the like, which are always in bloom, and fresh and pretty in habit.*

After this, we would add to the effect of our selection of perpetual blooming plants, by abandoning altogether the old method of *intermingling* species and varieties of all colors and habits of growth, and substitute for it the opposite mode of *grouping* or *massing* colors and particular species of plants. Masses of crimson and white, of yellow and purple, and the other colors and shades, brought boldly into contrast, or disposed so as to form an agreeable harmony,

* Some of the most beautiful of the perpetual blooming plants for the flower garden, are the *Salvias*, *Bouvardias*, Scarlet Geraniums, &c., properly green-house plants, and requiring protection in a pit or warm cellar in winter. "Bedded out" in May, they form rich flowing masses till the frosts of autumn.

will attract the eye, and make a much more forcible and delightful impression, than can ever be produced by a confused mixture of shades and colors, no where distinct enough to give any decided effect to the whole. The effect of thus collecting masses of colors in a flower garden in this way, is to give it what the painters call *breadth of effect*, which in the other mode is entirely frittered away and destroyed.

This arranging plants in patches or masses, each composed of the same species, also contributes to do away in a great degree with the second fault which we have alluded to as a grievous one in most of our flower gardens—that of the exhibition of bare surface of soil—parts of beds not covered by foliage and flowers.

In a hot climate, like that of our summers, nothing is more unpleasing to the eyes or more destructive to that expression of softness, verdure, and gaiety, that should exist in the flower garden, than to behold the surface of the soil in any of the beds or parterres unclothed with plants. The dryness and parched appearance of such portions goes far to impair whatever air of freshness and beauty may be imparted by the flowers themselves. Now whenever beds are planted with a heterogeneous mixture of plants, tall and short, spreading and straggling, it is nearly impossible that considerable parts of the surface of the soil should not be visible. On the contrary, where species and varieties of plants, chosen for their excellent habits of growth and flowering, are planted in masses, almost every part of the surface of the beds may be hidden from the eye, which we consider almost a *sine qua non* in all good flower gardens.

Following out this principle—on the whole perhaps the most important in all flower gardens in this country—that there should, if possible, be no bare surface soil visible, our own taste leads us to prefer the modern English style of laying out flower gardens upon a *ground work of grass* or turf, kept scrupulously short. Its advantage over a flower garden composed only of beds with a narrow edging and gravel walks, consists in the greater softness, freshness and verdure of the green turf, which serves as a *setting* to the flower beds, and heightens the brilliancy of the flowers themselves. Still, both these modes have their merits, and each is best adapted to certain situations, and harmonizes best with its appropriate scenery.

There are two other defects in many of our flower gardens, easily remedied, and about which we must say a word or two in passing.

One of these is the common practice, brought over here by gardeners from England, of forming raised *convex* beds for flowering plants. This is a very unmeaning and injurious practice in this country, as a moment's reference to the philosophy of the thing will convince any one. In a *damp* climate, like that of England, a bed with a high

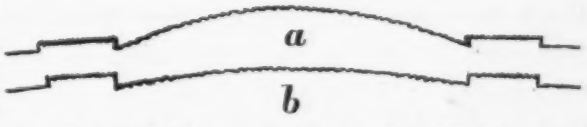


Fig. 103. *Section showing the surface of the beds.*

convex surface, (*a*, fig. 103) by throwing off the superfluous water, keeps the plants from suffering by excess of wet, and the form is an excellent one. In this country, where most frequently our flower gardens fail from drouth, what sound reason can be given for forming the beds with a raised and rounded surface of six inches in every three feet, so as to throw off four-fifths of every shower? The true mode, as a little reflection and experience will convince any one, is to form the surface of the bed nearly level, (*b*) so

that it may retain its due proportion of all the rains that fall.

Next to this is the defect of not keeping the walks in flower gardens *full* of gravel. In many instances that we could name, the level of the gravel in the walk is six inches below that of the adjoining bed or border of turf. This gives a harsh and ditch-like character to the walks, quite at variance with the smoothness and perfection of details which ought especially to characterize so elegant a portion of the grounds as this in question. "Keep the walks brim full of gravel," was one of the maxims most strongly insisted on by the late Mr. LOUDON, and one to which we fully subscribe.

Our engraver has executed, for our FRONTISPIECE of this month, a copy of the plan of the celebrated flower garden of BARON VON HÜGEL, near Vienna. This gentleman is one of the most enthusiastic devotees to Horticulture in Germany. In the *Algemeine Garten Zeitung*, a detailed account is given, by the Secretary of the Imperial Horticultural Society of Vienna, of the residence and grounds of the Baron, from which we gather that they are not surpassed in the richnesss and variety of their botanical treasures by any private collection on the Continent. "A forest of Camellias almost makes one believe that he is in Japan." Some of these are 22 feet high, and altogether the collection numbers 1000 varieties. The hot-house devoted to *orchids*, or air plants, contains 200 varieties, and the various green-houses include equally rich collections of the exotics of various climates. Regarding the Baron's flower garden itself, we quote the words of M. PEINTER:

"But still another most delightful scene is reserved, which is a mosaic picture of flowers, a so-called Rococo garden. We have to thank BARON VON HÜGEL for giving the first example of a style, since pretty largely copied, both here and in the adjacent country. A garden, laid out in this manner, demands much cleverness and skill in the gardener, both in the choice and the arrangement of the flowers. He must also take care that, during the whole summer, there are no portions destitute of flowering plants. It is but justice to the Baron's head gardener, to affirm that he has completely accomplished this task, and has been entirely successful in carrying out the design or purpose of this garden. The connoisseur does not indeed see the usual collection of ornamental plants in this sea of flowers, but a great many varieties; and, in short, here, as every where else, the æsthetic taste of the Baron predominates. Beautiful is this garden within a garden, and hence it has become the model garden of Austria. Around it the most charming landscape opens to the view, gently swelling hills, interspersed with pretty villages, gardens and grounds."

In the plan of the garden, *a* and *b* are masses of shrubs; *c*, circular beds, separated by a border or belt of turf, *e*, from the serpentine bed, *d*. The whole of this running pattern is surrounded by a border of turf, *f*; *g* and *h* are gravel walks; *i*, beds, with pedestal and statue in the centre; *k*, small oval beds, separated from the bed, *l*, by a border of turf; *m*, *n*, *o*, *p*, irregular or arabesque beds, set in turf.

As a good deal of the interest of such a flower garden as this, depends on the plan itself, it is evident that the beds should be filled with groups or masses, composed mostly of *low growing* flowers, as tall ones would interfere with, or break up its effect as a whole. Mr. LOUDON, in some criticisms on this garden, in the *Gardener's Magazine*, says, that the running chain

pattern of beds, which forms the outer border to the design, was originated in England, by the Duchess of Bedford, about the year 1800. "It is," he remarks, "capable of producing a very brilliant effect, by planting the circular beds, *c*, with bright colors, each alternating with white. For example, beginning at *c*, and proceeding to the right, we might have dark red, *white*, blue, *white*, yellow, *white*, scarlet, *white*, purple, *white*, and so on. The interlacing beds, *d*, might be planted on exactly the same principle, but omitting white. Proceeding to the right from the bed *d*, which may be yellow, the next may be crimson, the next purple, the next orange, and so on."

This plan is by no means faultless, yet as it is admirably planted with ever-blooming flowers, and kept in the highest order, it is said to attract universal admiration, and is worthy of the examination of our floral friends. We should imagine it much inferior, in design and general effect, to the very beautiful new flower garden at *Montgomery Place*, the seat of Mrs. Edward Livingston on the Hudson, which is about double its size, and is undoubtedly one of the most beautiful and most tastefully managed examples of a flower garden in America. Hereafter we may have the pleasure of laying the plan of it before our readers.

THE BELLE DE BRUXELLES AND PAQUENCY PEARS.

BY P. BARRY, ROCHESTER, N. Y.

[We were much gratified while in the *Mount Hope Garden*, at Rochester, last summer, to find that Messrs. Ellwanger & Barry had succeeded in introducing the true *Belle of Brussels* pear. We have been familiar with the appearance of this handsome fruit, from a fine colored plate in Noisette's *Jardin Fruitier* for years, and have, like other collectors, endeavored to procure it from abroad without success—the *Belle et Bonne* and the *Angleterre*, two inferior fruits, always having been received under this name.

We saw by the first glance at the tree referred to in the following article, that the genuine sort was at last obtained. It is undoubtedly a scarce variety abroad. We observe by the *London Horticultural Society's Catalogue* that it has been lost from that collection. We think it likely to prove a very valuable addition to our early fruits.

Mr. Barry's description is the best we have seen of this variety. That in the *Jardin Fruitier* is incomplete.* The colored figure in that work, however, shows a fine specimen, and we give an outline from it in the same figure with Mr. Barry's; *a* being the outline from the *Jardin Fruitier*; *b* the outline sent us from one of the specimens grown at Rochester. In the size of the latter, of course allowance must be made for the enormous crop borne by the tree, of which it was a part. This crop was not quite ripe when we saw the tree, but the specimens were very beautiful in form and color, and we hope the stock of this, the genuine *Belle of Brussels*, at the Mount Hope Garden, will soon find its way into general cultivation.—Ed.]

* "Fruit gros, souvent très allonge, renfle à la base, jaune dans l'ombre, colore en rouge du côte du soleil lorsqu'il est bien expose, autrement restant jaune partout: chair blanche, fondant, parfumee, tres bonne; sa maturite a lieu vers le milieu d'Août."—p. 121.

These are two European pears that may very justly be placed on your list of *select kinds*.

They were procured in France in the spring of 1844, by my partner, Mr. Ellwanger, among a large collection of Belgian and French varieties. They have borne for two years, and I think I may speak of them with some degree of confidence.

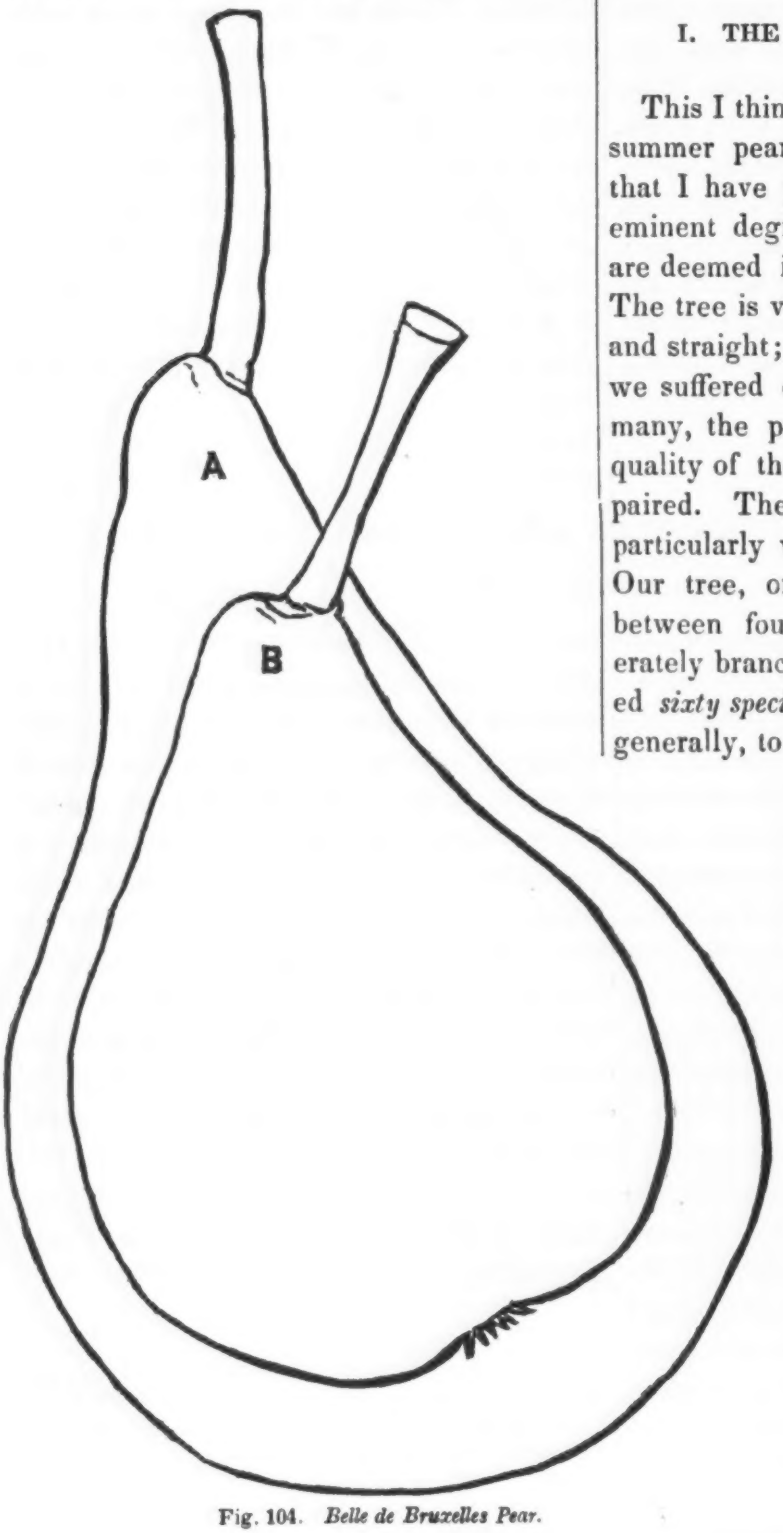


Fig. 104. *Belle de Bruxelles Pear.*

I. THE BELLE DE BRUXELLES.

Belle d'Août.

This I think unsurpassed, at least by any summer pear of native or foreign origin that I have yet seen. It combines in an eminent degree, the various qualities that are deemed indispensable in a good fruit. The tree is vigorous, its growth is compact and straight; it is prolific to a fault; indeed, we suffered our specimen tree to bear so many, the past season, that the size and quality of the fruit were considerably impaired. The fruit will require thinning, particularly when grown on the quince. Our tree, on the quince stock, is only between four and five feet high, moderately branched, and yet it bore and ripened *sixty specimens*; but they were inferior, generally, to the two dozen borne the previous year. By the way, I may remark that this matter of thinning is of great importance in growing fruits, and particularly pears. Many sorts are so prolific in habit as to bear double the number that the tree is able to mature perfectly, and if thinning is not attended to, the best varieties will sometimes prove insipid and worthless. I find this to be the case with *Capiaumont Cabbasse*, *Henry the 4th*, *Passe Colmar*, and many others.

The Belle de Bruxelles may be described thus:

Fruit, large; (the figure is rather below the average; large specimens will measure nearly four inches long.) *Thape*, long pyriform, broadest a little above the eye, and tapering regularly to the stalk, where it has usually two or three little folds or fleshy rings, like the St. Ghislain and some others. *Stalk*, an inch and a half to two inches long, pretty stout, and curved, with usually a fleshy knob on the end attached to the tree. *Calyx*, large, open, even with surface. *Skin*, smooth, rich deep yellow at maturity, sprinkled all over with small greenish dots, with a delicate touch of red on the sunny side. *Flesh*, white, fine grained, melting, sweet and fine flavored. Ripe from the 10th to the last of August.*

II. THE PAQUENCY.

This is one of the most delicious autumn varieties. The tree is a rapid, vigorous grower, and extremely prolific. Like the *Belle de Bruxelles*, the fruit requires thinning. We had them in eating, the past autumn, at the same time with the *White Doyenne*, *Seckel*, *Ananas*, *Urbaniste*, *Onondaga*, *Stevens' Genesee*, and other first rate sorts, and on being tasted and compared with them by our neighboring *connoisseurs* in these matters, they were freely admitted into that class.

Fruit, medium size. *Shape*, regular pyriform, broadest one-third above the eye, tapering regularly to a point at the stalk.

Fig. 105. *The Paquency Pear.*

Skin, smooth, dark yellow at maturity, with a tinge of dull red on the side fully exposed to the sun, sprinkled with dots and small patches of russet. *Stalk*, over an inch long, quite stout, of a dark brown color, and slightly curved. *Calyx*, open, segments stiff, basin shallow and marked with russet. *Flesh*, white, not very fine grained, but melting and abounding with a rich perfumed juice. *Core*, small. *Seeds*, perfect, dark brown. Ripens in October, and is in use till November.* P. B.

Mount Hope Garden and Nurseries, Rochester, N. Y.

* *Note.*—I have been informed that the *Belle de Bruxelles* of some of the Boston Gardens, has proved to be the *Belle et Bonne*, a round fruit, of great size, productiveness and beauty, but deficient in fine flavor. It does well with us, bears in great clusters, ripens from the middle to the last of September.

* We first tasted this pear three seasons since at the residence of Col. WILDER, near Boston, who we believe introduced it. Its flavor is excellent.—Ed.

HOW TO RAISE THE BEST GOOSEBERRIES.

BY A JERSEYMAN.

Sir—I hear almost every body complain of the difficulty of raising fine gooseberries. The bushes, to be sure, grow easily enough. It is not difficult to get from the nurseries the prime English sorts—sorts with large and high flavored fruit, really worth growing. But there seems to be something wrong in our warm and dry climate, that is utter ruin to the fruit. A sort of *scurf* or *mildew* settles on the berries as soon as they are about a quarter grown, and destroys the whole crop. Once attacked by this pest, the berries are past cure, and quite worthless.

Now I have been very lucky in my gooseberry growing, and it has struck me that a few words about my way of doing the thing might help some unfortunate being, fond of gooseberries, but who does not know how to raise them.

I plant my gooseberry trees in a long border on the north side of a paling fence. Before planting them, I trench the border two feet deep, as I know that the roots of the gooseberry love plenty of moisture all summer, which they can never get in the soil, unless it is made deeper than common, by trenching it well. For manure, I give it a heavy dressing of common stable manure, when the trenching is going forward.

I then put out my gooseberry plants early in the spring, or early in the fall, as may be most convenient to me. I have not found that the season makes much difference. I plant them about four feet apart every way, and always keep them trimmed to clean single stems like small trees.

There are hundreds of sorts of "prize gooseberries" raised in Lancashire, but they are not all suited to this climate. I have tried a great many and have settled down upon *two*, which, taking all in all, I think not surpassed by any others for this climate. These are the *Crown Bob*, a grand old red gooseberry of excellent size, always bears good crops and possesses a high flavor; and the *White Smith*, quite as good among the whites, as Crown Bob is among the reds. There are no doubt many others, very good ones, in the catalogues, but there are none better, and as there is not much variety in gooseberry flavor, I am quite content with these two prime sorts, that will satisfy any body, however fastidious.

I prune my gooseberries among the very first bits of garden work done in the opening of spring. I usually cut out about one-third of the wood made the previous summer. As soon after that as the ground is in working order, I give the border where they grow the dressing for the season, after this fashion. I first provide myself with a couple of barrels of *soot*, as this is my favorite manure for this shrub. It is easily enough collected during the winter, with the help of a chimney-sweeper in my neighborhood, and I suppose every housekeeper might save enough for the gooseberries in his own garden, if he is not so large a gooseberry grower as myself, out of the sweepings of the chimneys and stove pipes about his own premises.

The gooseberry border is first nicely dug over. I then scatter a light dressing of the soot over the whole surface, and under the bushes, at the rate of a quart to each gooseberry bush. This gives them plenty of stimulus for the season's growth, for soot is a very

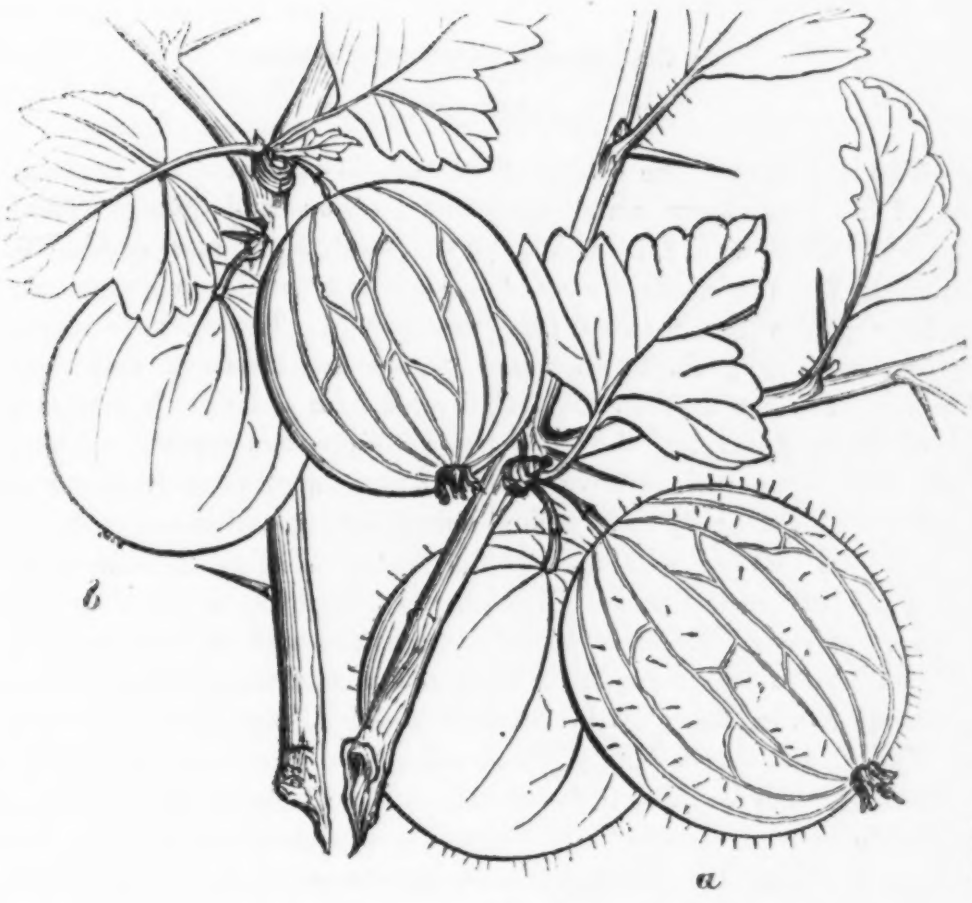


Fig. 106. a, *Mellings Crown Bob.* b, *Woodward's White Smith.*

powerful manure, and no plant likes richer soil than the gooseberry.

Next comes my remedy against the mildew. This is neither more nor less than *salt hay*, (i. e. hay from the salt marshes.)* As soon as I have made the top dressing of soot, I cover *the whole surface* of my gooseberry border with salt hay to the depth of three inches. This keeps the soil always moist and cool, not merely by covering the ground with the hay so that it shall not be made dry by the sun, but because the salt in the hay always attracts moisture from the air, and gives it out to the bushes. This prevents the sudden changes from hot to dry, which always almost immediately cause mildew. I have tried it now six years and have never had a blighted berry from the first, though in the same soil, and with these very sorts, I had bother enough with this troublesome thing before.

My crops are regular and large. I send you a rough sketch(fig. 106)of about the usual size of my two favorite sorts, grown after my fashion. They may not equal the prize sorts of the Lancashire weavers, who put a saucer of water under their show berries to make great dropsical monsters of them, but I will answer for it, they are higher flavored. Yours with much respect,

A JERSEYMAN.

* [We suppose in districts of country where salt hay is not produced, a substitute might be found in any coarse common hay soaked in brine.—ED.]

The Cincinnati Strawberry Culture.

BY A. H. ERNST, CINCINNATI.

DEAR SIR—The questions of the character and habits of the Strawberry plant, and the principles on which they rest (now so satisfactorily settled in the minds of most of those who have paid attention to the subject,) has become, among *Horticulturists*, one of absorbing and deep interest. In the settlement of these principles, the advocates of old and vague notions have adhered to them with a tenacity and resolution that would be satisfied with nothing short of the most positive testimony. Had the explanations and developments of these principles been left to less antagonistical and persevering hands, they would still rest where KEENE, and others, faintly saw, and left them. A meed of praise is due to the indefatigable and persevering zeal of Mr. LONGWORTH, from the community, which would not be sufficiently expressed by a *medal* of *gold*. It is not, however, my design to take up your time, or that of your readers, in a eulogy; but to confine my remarks to the oft repeated inquiries, elicited by the statements of the extraordinary quantity of Strawberries raised in the vicinity, and sold in the Cincinnati market. "What are the sorts raised, and the method of their cultivation, with the extent of the ground occupied, and its yield?" These questions I shall endeavor to answer in their order, as collected by personal inquiries from the most prominent amateurs and cultivators, with some views and remarks on my own experience, premising with a remark or two on the adaptation of our *soil* and *climate* to the superior development of the *Strawberry*.

The soil in the region of Cincinnati, may be said, in general terms, to consist of two kinds; *bottoms* and *upland*. The former is a rich sandy loam, more or less mixed with the washings of the vegetable mould from the uplands. The latter composes our hills, the tops and slopes of which are mostly covered with a dark rich vegetable mould, on a stiff limestone subsoil. This gives the cultivator an opportunity of adopting that soil most congenial to the productiveness of his plants. The composition of the top soil of the upland, on which the plants delight to luxuriate, with the tenacity of its subsoil to retain, and supply them with a greater uniformity of moisture, without a surfeit, renders the upland soil decidedly preferable. The blooming and fruiting season is mostly attended with exciting and stimulating showers of rain, with bright and invigorating sunshine intervening. Perhaps there are no temperate countries which exceed this in the luxuriance of its vegetation at this period. We have, then, all the natural elements most favorable to the fullest development and product of the Strawberry.

The sorts principally cultivated for the market, are,

1st. The *Early Scarlet*, the first and oldest sort introduced. Fruit of medium size, globular, bright scarlet, a good bearer, and a fine fruit, and desirable as an early variety.

2d. *Neck Pine:* Fruit large, conical, with a neck or shoulder, scarlet, early, a great bearer, and fine fruit.

3d. *Hudson:* Fruit large, shape conical, much inclined to flatten, dark red, flesh firm, acid, but fine flavored, without a neck, very hardy and a great and uniform bearer,

ripening some days after the *Early Scarlet* and the *Neck Pine.*

4th. *Hovey's Seedling* has produced very fine and large fruit, but does not yet appear much in our market. The expectations from it are very high, and extensive plantations have been and are being made. Should it, on an extensive scale, equal the expectations of cultivators, it will ere long become one of the principal sorts in the market.

Most of the foreign sorts, and those of our own country, of repute, are in the hands of amateurs and cultivators, on trial, but so far none have been found worthy to supplant those above named. Of these the *Hudson*, has, since its introduction among us, assumed and decidedly maintained the lead; it is, like the other three named, a pistilate plant, which will not fruit unless fertilized by the pollen of a staminate plant.

In the cultivation, there is nothing remarkably differing from well known practices, more than a due regard to the quantity of *staminate* plants permitted to grow with the *pistilates.* This is about one to every ten or fifteen. To guard against an undue proportion of staminates, and also to keep up a constant supply of young and vigorous bearing plants, new plantations are formed every third or fourth year, when the old plantations are turned under. This practice is applicable to cultivators on a small or moderate scale. The remaining part of the question will be fully and more satisfactorily answered by a few notes of my visit to, and a stroll over the *Strawberry fields* of *Kentucky.* These are situated on the west bank of Licking river, which empties its waters into the Ohio directly opposite to Cincinnati, thus affording them the best facilities to carry their fruit to market. My first call was about five miles up the river. On inquiring for the proprietor, the good lady of the house informed me that he was not at home, but if I would "go to yon orchard," pointing to it, I should "find her *sister there pruning* the *trees*; she could give me all the information I desired." I soon found myself in the presence of the fair Horticulturist, *with her hatchet and saw in hand.* After making my bow, and receiving polite answers to my inquiries, from which I learned they were but new beginners, and had, in their first plantation, rested their hopes for future success on the *Hudson* and *Hovey's Seedling*, I passed on about two miles farther, to what may be called the "Culbertson settlement," consisting of *seven families*, all depending mainly on the culture of the Strawberry, to which, however, they have added the Raspberry and Apple, and some other fruits. I paid a visit to the oldest and largest cultivator, who kindly accompanied me over the fields, and from whom I obtained the following facts. The ground preferred is *new land, in its virgin state, immediately after the timber is cleared off.* This is, with the plough, formed into *lands* of four or five feet wide, and extending, in length, across the field. In the centre of these strips, or *lands*, a single row of plants is planted, two feet apart, all pistilate, except every fifth or sixth, which is a staminate. This planting is performed in the spring, and by fall there is a good supply of plants, which will yield a tolerable crop of fruit the next year. All the attention they receive afterwards, is running two or three furrows with the plough between the lands, in the fall or early in the spring, and at the same time, with a hoe, clearing off the weeds, grass, briars, &c. When, at last, these and the staminates become too numerous, the whole is turned under. The largest field I passed

over contained *thirty acres*, twenty-three of which are in a fruiting condition. This, as indeed are almost all, is located on the slope of a hill, having almost every aspect. The owner of this field, besides smaller ones, has a new field, of the last year's planting, of *twenty-three acres*, making *his entire Strawberry plantations fifty-five or sixty acres in extent*. From the best estimate I could obtain, there is not less than *one hundred acres in Strawberries* in this neighborhood. The owner of the thirty acre field, sent to market, from that and a seven acre lot adjoining it, *one hundred and twenty bushels per day*, for eight or nine days, during their prime, last summer. If we double this, which I am informed will be below the actual estimate, we have from this neighborhood a daily supply of *two hundred and forty bushels.*

There are, on both sides of the Ohio, many other quite extensive cultivators, for whom it will probably not be saying too much, that they add at least one hundred and fifty bushels per day to the supply. We have then an aggregate of *three hundred and ninety bushels*, as the *daily supply* of our market, for some eight or nine days of their prime, without saying one word of those raised in our private gardens, which is by no means a small quantity. This, multiplied by thirty-two, gives us *eleven thousand four hundred and eighty quarts per day.* These, at an average of six cents per quart, give us the daily sum of *six hundred eighty-eight dollars and eighty cents*, as a reward to the husbandman for this portion of his industry. The season continues eighteen or twenty days; of course half of this time the supply is not so great. The cultivation on this extensive scale is quite rude, compared with that on a more limited one, and the yield of course proportionally less. This is shown by the fact that the seven acre field above alluded to, three years after its planting, when more attention could be bestowed on it, yielded a daily supply of *seventy-five bushels!* The land up the valley of Licking is among the best in this vicinity, and when Kentucky shall act wisely, and allow none but *freemen* to cultivate and tread her *soil*, this valley, owing to the character of its land, the various aspects afforded, and the easy communications with this rapidly growing *mart*, must become one *beautiful garden*, for miles up its banks, and land that can not be sold for over twenty-five to thirty dollars per acre, will then readily bring hundreds.

The sexual character of the Strawberry plant is so deeply interesting that I shall be pardoned for dwelling somewhat on that subject. The Strawberry plant, as now understood, may be divided into three distinct classes or divisions. First, those having both stamens and pistils so developed and perfect, that the one may fertilize the other, and are thus fruitful in themselves, or in other words, *perfect plants.* The second, are those having pistils or female organs fully developed, with generally the rudiments of the stamens, or male organ, but so defective as to be incapable of fertilizing the pistils; these are called pistilate, or female plants. The third, are those having the stamens perfectly developed, but mostly without the pistilate organs; these are called staminate, or male plants. Each of these divisions consists of innumerable varieties, of separate and distinct origin, varying more or less in the development of their sexual organs, so that it is not unusual to find a partial crop of fruit on some of the two last named divisions. These last two are, however, dependant on each other for a perfect and full fruiting. When the plants are properly proportioned, this is al-

ways more abundant than that of the first division. An important question has been raised, "how far is the character of the staminate impressed on the pistilate to affect the size and flavor of its fruit?" If we may be permitted to reason from well established analogies, it is certain that the seed does possess the properties of both parents to a greater or less degree. This would seem to justify the idea that the pulp also may, for that is as much the result of the union of the sexes as the seed, which it only envelopes. [Our correspondent forgets that many male plants bear fine fruit, minus the seeds, without the aid of stamens—Ed.] If it be true (as is believed by some) that the flavor of the cucumber is imparted to the melon, by the pollen of its bloom on the pistils of the other, there would seem to be good reason for directing attention to the subject, in the hope that it may induce those who have leisure, and feel an interest in the advancement of horticultural knowledge, to test the question by careful experiments.

The question of the *changeability* of the Strawberry plant, by your experiments on Hovey's Seedling, as detailed in the August No. of the "Horticulturist," is still left a debatable point. And unless you have some how been deceived, I do not see but that we are thrown back to where we started, and that with a degree of increased uncertainty that leaves the future prospects and hopes of the cultivator all a matter of chance, unless indeed your opinion shall prove true, that when the plant changes to pistilate or staminate, it is so permanently. Your view as to this point would seem to reconcile the difficulty under which Mr. Hovey has labored to discover the true character of his Seedling, which should, therefore, no longer be a subject of surprise.

My experience accords with that of our most eminent Horticulturists, who have devoted their attention to this subject, and whose opinions, so far as I can learn, are against the possibility of such change. Among them I will take the liberty to name Dr. W. Smith. He informs me that he made a plantation of the Hudson, excluding all staminate plants, and remote from other plantations; the result was, his plants continued to bloom finely, from year to year, but without setting fruit; when satisfied, he introduced staminate plants, and the consequence was an abundant supply of fruit. Dr. Shaler informs me that some years since he procured, direct from Hovey, plants of his Seedling. These he increased by themselves; they bloomed finely, but set *no fruit;* at length he introduced into his plantation a single plant, in a pot, of the *Iowa* male Strawberry, when in bloom. Its ample supply of pollen was liberally strewed on the pistils of all the plants in its neighborhood, which resulted in the setting and maturing a good crop of fine fruit on all the plants within its reach, the others remaining unfruitful as before. R. Buchanan, Esq., late President of our Horticultural Society, informs me that he finds the same distinction to exist among the native or wild Strawberry plant, and on transplanting them to his grounds, has never discovered any change produced by cultivation on their sexual organs. This is also confirmed by N. Longworth, Esq., Geo. Graham, Esq., and Dr. Mosher, who have all experimented considerably on the wild or native plant.

My own experience, corroborating these opinions and experiments, leads me to this point: that every variety of the Strawberry, from the original sorts, is the product or result of a *single plant*, from a *single seed*.

That I may be fully understood, permit me to illustrate. *Hovey's Seedling*, is the product of one single seedling plant, and not of two or more plants. This plant was either perfect in the structure of its male and female organs, or it was a pistilate or a staminate plant. What its character was at its first fruiting, it must still be, and will remain so, with its offspring. If it were otherwise, or there could be any uncertainty in this, where would be the security as to the continuance of this or any other variety? If one plant may change its character, all the rest may. Any plant, then, deviating from the original, I take to be spurious, however closely it may resemble it.

If you plant the seed of a Bellflower Apple, the probability is that the product of each seed will vary in its habits, growth, foliage, and fruit. So with each seed of a Strawberry. In the case of the Apple, you would expect no *radical* change in the offspring, whatever the mode adopted to increase or propagate it. This I think is precisely a parallel case, and if sound in one, must be in the other. It is true that bad, as well as good cultivation will affect the growth and fruit of either, but will not produce a radical change. That these views are in harmony with the laws that govern the continuation of races of plants and their varieties, I apprehend will not be controverted.

The idea, then, as suggested by Mr. Loudon, that "it is better to propagate only from hermaphrodite plants, for though some of the runners of these may prove sterile, yet the greater part will be prolific," is fallacious and untenable.

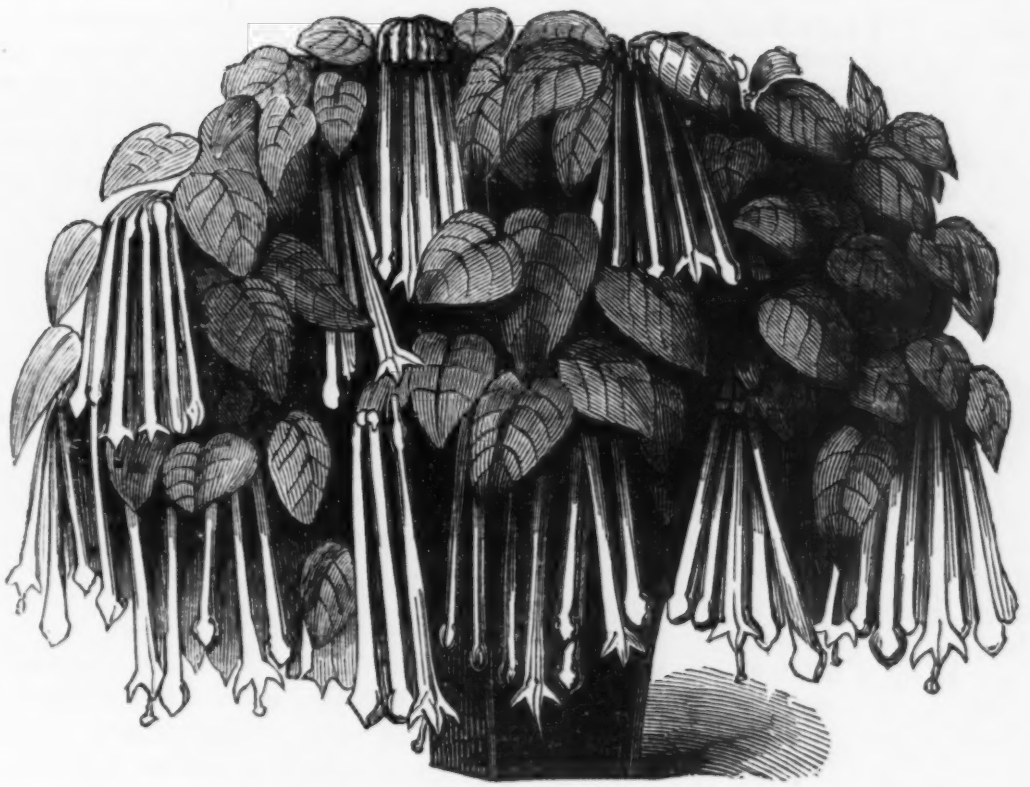
We must, then, look to some other source for the apparent or supposed change of the Strawberry plant. In this I apprehend we shall find no difficulty. Every cultivator knows the rapidity with which runners are formed, and the extent to which they push, which is not unfrequently six to eight feet. This is more especially the case with the staminate plants, which are always (owing to their barrenness) the most vigorous and luxuriant. Their whole substance is spent in growth and multiplication. Although a distinct plant, its general resemblance to the pistilate plant when not in bloom, is such, in many cases, as to elude the most vigilant eye. It is not, therefore, safe to take it for granted, because we have carefully removed all blooming staminate plants that we are rid of them, but on the contrary, by the removal of the old staminates we afford greater facilities to the growth and development of such unblooming plants as have eluded our vigilance, and to our great surprise and disappointment we find our plantation full of them the next spring, when we are ready to conclude the plant is changeable. The safest practice is, if it is desired to exclude all staminate plants from the plantation,—when the plants are in fruit, carefully to take up all that are not well and fully set with perfect fruit, taking care at the same time that no other plantations are sufficiently near to admit interlopers, and that no accidental seedlings are permitted to spring up and to grow. If this is faithfully performed, I doubt not the experimenter will be a thorough convert to the doctrine that Strawberry plants are not changed from perfect to pistilate, or staminate, by good or bad cultivation.*

I hope, sir, that you will find sufficient *point* in the above remarks, to make an apology for the length of this article unnecessary.

A. H. Ernst.

Spring Garden, near Cincinnati, Jan. 30th, 1847.

* [This subject is now a matter of such nice observation, with so many of our cultivators, that we trust the coming season will decide it—Ed.]



THE LARGE FLOWERED FUCHSIA—FUCHSIA MACRANTHA.

FROM THE LONDON HORTICULTURAL MAGAZINE.

The Fuchsia is a very popular family of plants, and though not a very extensive one, as compared with others we are are acquainted with, yet it comprehends very considerable variety, both in the flowers, and in the habit of growth of the species which it contains. We are now looking at the genus, botanically—as a family group of distinct individual forms, called species. Florists have intermixed these species, until they have given rise to an almost endless number of varieties, some of which are indeed very distinct and very handsome, but the great majority are considered by many persons to be very inferior in beauty to the original kinds from which they were produced. The great and prevailing faults of these varieties are their sameness and tameness of coloring, and their coarseness of texture, which points—and they are blemishes—are much more observable in very many of the hybrids than in their parents.

The wild species are variously distributed, but with hardly an exception are found in the New World. Some of them are small spreading shrubs, with small flowers, of which class one now much neglected, called microphylla, is a floral gem. Others are of much larger size, with much larger flowers hanging on long stalks like "ear-drops," from the base of every leaf, and furnishing the old-fashioned idea of a Fuchsia. Subsequently to the introduction of these, some kinds, with tube-shaped flowers several inches long, and hanging in dense bunches from the end of the branches, have made their appearance in our gardens; and others, again, have been imported, which, we are told by travellers, cling to the forest vegetation of South America, something in the way that the ivy embraces our native sylvan forms. Many species known to botanists, and which are regarded by them as the most remarkable native forms, remain to be introduced. Florists have attempted to bring the Fuchsia under

cognizance of their rigid rules, but with such a variety of original forms, it is no wonder that they have been less successful in moulding this flower to a "standard," than most others to which their attention has been directed.

Fuchsia macrantha, of which a representation accompanies this notice, is the most recent introduction, having been received from South America, by Messrs. Veitch and Son, of Exeter, from their collector, Mr. W. Lobb, and bloomed for the first time in this country during the spring of the present year, (1846.) We had an opportunity of witnessing blooming plants sent in April to the meeting of the Horticultural Society of London, and are therefore in a position to state, from personal inspection, that it is perfectly distinct from any of the kinds already in cultivation; we cannot indeed consider it to be the most beautiful of the kinds we are acquainted with, but being a handsome plant, it will no doubt, on account of its distinctness, meet with a considerable share of public favor.

The greatest peculiarity for which this plant is remarkable, is the absence of petals in the flowers, so that, in fact, the flowers consist simply of long tubes, divided at the lower extremity into four obtusely angular segments, beyond which the style, but not the stamens are protruded. At present, in a cultivated state, it assumes the form of a low, somewhat straggling shrub, with spreading branches; but Sir W. Hooker states, that in Peru, where it was originally observed in lofty mountains at Andimarca, it was found climbing on the trees, so that we may expect the straggling habit which has been manifested to become more fully confirmed and developed, as our acquaintance with it increases. It has however not yet been seen to exceed about two feet in height, and in this state the flowers quite conceal the stems, from the number in which they are produced; indeed, so freely does it produce its flowers, that small plants, scarcely more than six inches high, are found to flower freely.

The whole plant is more or less clothed with coarse pubescence; it has large leaves, of an acutely ovate figure, and purplish beneath, and pendulous apetalous (without petals) flowers, the calyx of which is very long—often six inches—cylindrical, a little widening upwards, and divided into four ovate segments; these flowers are each produced on a separate stalk, sometimes solitary, sometimes aggregated, also "among the terminal leaves, which are often so small as to give the appearance of terminal corymbs; at other times, the flowering branches are crowned with a tuft of leaves." The color of the flowers is a rosy red, paler towards the base of the tube, and also on the segments, which are slightly tipped with green. If, observes Sir W. Hooker, this be not the most brilliantly colored of Fuchsias, it certainly can boast the largest flowers, and it bears them more copiously than any other species.

Mr. W. Lobb, the collector to Messrs. Veitch, detected this plant growing in woods near Chasula, in Columbia, at an elevation of 5,000 feet above the sea; and it is through this source that it has been introduced to this country in a living state. Dried specimens have been for some time in Sir W. Hooker's herbarium.

In regard to cultivation, it will, doubtless, prove a hardy green-house species, the elevation of its natural habitat (5,000 feet) being sufficient to warrant this conclusion: there is indeed every reason to believe that it would succeed out of doors during the summer months. Like other species of similar habit, the present seems to be most fitted for a conservatory, where it might be either planted out, in the border, or grown into a large specimen in a pot. From the manner in which the blossoms of the plant are produced, it will be obvious that it is well adapted for growing into the form of a standard, from which the long dependent flowers would hang with good effect. Whatever beauty there may be in plants of small size, there can be no doubt that those which are grown into larger bushes will proportionately increase in beauty; such is the case with F. fulgens, and F. corymbiflora, the two kinds common in our gardens, to which in general characters this bears the greatest resemblance. It seems to bloom early in the summer.

It is hardly necessary to mention that a

coarse, rich loamy soil is most suited for Fuchsias; and that if full exposure to the light is secured to them, they will thrive best when treated on something like the large-shift system.

Fuchsias belong to the natural order Onagracæ, the same order which includes the Œnothera, and other garden flowers. In the Linnæan arrangement, they belong to Octandria monogynia.

HINTS ON THE RIPENING OF WINTER PEARS.

BY SAMUEL WALKER, ROXBURY.

[MANY novices in the culture of the pear are disappointed in many of the new winter varieties; and chiefly because they are not aware that, to attain their proper flavor, they must be ripened off in a *high temperature.* We beg the attention of the uninitiated in these matters, to the excellent hints from our correspondent, SAMUEL WALKER, Esq., than whom no one is more familiar with the subject.—ED.]

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THE increasing demand for fruit, and more particularly for autumn and winter pears, has caused frequent inquiries to be made by the cultivators of this delicious fruit, as to the best mode of keeping and ripening the different varieties for the table and for the market. This subject, at present, is but partially understood; but, with your permission, I will venture to offer a few crude hints, and all the practical experience I possess on the subject.

"To begin at the beginning," I consider it very desirable that every fruit-grower should have a *Fruit-House*, or *Fruit-Rooms*, consisting of at least two apartments, viz: a *keeping* and a *ripening* room. For this purpose I would suggest an ornamental building of brick, stone or other material, so constructed as to keep out the frost, divided into two rooms of such size as may meet the wishes and wants of the cultivator.

The floor of the keeping-room to be of brick or stone; the ripening-room floor to be of wood, if you please, covered with a carpet, and to render it comfortable and suitable for the purpose, a fire place to heat the apartment when necessary.

The same treatment will not, I believe, suit all the kinds of pears (maturing at the same season) whether they be autumn or winter varieties. For illustration, let us compare the *Chaumontel* and the *Vicar of Winkfield* (*Monsieur le Cure;*) the first will ripen when subjected to great changes and expcsure to frost; indeed, it may be left upon the ground with only a slight covering of leaves, grass or other light substance, at times covered with snow, the thermometer varying from 10° above zero to summer heat, and still the ripening process advances, and is, in all probability, accelerated by these sudden changes until the fruit is nearly ripe, at which time, if the fruit is taken into a cold cellar for a few days, (if frozen put into some soil to take out the frost,) and then removed into the keeping-room, there boxed up with cotton batting, and then placed in the ripening apartment, the maturing process will be promoted until the fruit has acquired its highest state of perfection. These remarks, I have no doubt, will apply to other varieties, of which time and experience will give, to the close and attentive observer, further information on this important subject. I will, however, venture to

express an opinion that the *Beurre Rance* and *Easter Beurre* may be put into this class.

On the contrary the *Vicar of Winkfield* belongs to a class of pears requiring a very different course of treatment. This variety should never be exposed to frost, but for late keeping it should be placed upon the floor of the keeping-room, and whenever the fruit is wanted for the table it should be put into tight boxes, wrapped up in cotton, and placed in the warmest part of the ripening-room, the temperature varying from 55° to 75° ; in this manner the fruit will be ripe in from fifteen to twenty days. Having thus attempted to show that the same treatment is not adapted for the ripening of all the varieties of the pear, (and this I have no doubt will apply to the apple,) I shall proceed to give my views as to the general treatment of autumn and winter pears.

All pears which come to maturity in the autumn and winter, should not be *gathered* until the fruit has attained its full growth, (the middle of October is about the season in the neighborhood of Boston.) This should be done by hand, some fine day when the fruit is perfectly dry, putting it away carefully into barrels,* buckets or boxes,† according to quantity, keeping each kind separate, labeling the same with its name, the day it was gathered and the season of its ripening. The fruit having been thus gathered and secured, it should be arranged in the *keeping-room* of the fruit-house, as the owner may think proper. The barrels may be placed upon the floor, the baskets hung up, and the boxes placed upon shelves. Where large quantities of any one kind are raised, bins may be proper.

The fruit being now placed in the keeping-room, care should be taken to keep the room cool, dark and dry ; shutters and curtains should be provided for the windows, to close them up, during the day, if the weather is bright, dry and hot ; at night, when the weather will permit, the thermometer not ranging below 30°, the windows may be all, or in part, left open for fresh air and ventilation. The windows and shutters should be closed early in the morning, to keep in the night air and to preserve the fruit. If mould or mildew should be seen upon the fruit, it should be removed with a dry cloth or silk handkerchief ; if about the floor, or other part of the building, strew a small quantity of air slaked lime about the room.

As the period of ripening approaches, all the varieties should be examined ; the fruit that shows signs of its soon coming to maturity should be carefully packed up with layers of cotton batting, in tight boxes, and in no case should the box be opened or the fruit unnecessarily exposed to the air. From the time fruit is gathered, until it is *fully* ripe, it should, in my opinion, be kept in close, dry vessels. The pears thus boxed up should be placed in the ripening-room, keeping the room at a temperature of from 55° to 75° of heat. As the fruit becomes ripe, send it to the table. When the fruit is intended for sale, it should be sent to market *a few days* before it is *fully ripe*.

SAMUEL WALKER.

Roxbury, Mass., Feb. 1847.

* All vessels used to keep fruit in should be perfectly dry, clean, sweet and tight. Barrels, after they have been used as "flour barrels," are not at all suited for fruit, unless well washed and dried, as the particles of flour left in the barrel will mould, and impart to the fruit an unpleasant odor and flavor. Fruit put into lime casks has kept well. Every thing in contact with fruit should be sweet and clean, and the vessel in which it is placed dry and tight. It should be handled or disturbed as little as possible.

† When fruit is put up into small boxes, to ripen, it may be wrapped up in cotton batting, but while it remains in the keeping-room, neither straw, paper or other like material should be placed with the fruit, as it is always more or less injurious.

A REVIEW OF OPINIONS ON PEAR TREE BLIGHT.

BY L. C. EATON, OF PROVIDENCE, R. I.

What is the malady by which fruit trees are affected, called the *fire blight?* Before we examine for a cause to which to ascribe its origin, it is necessary to determine what are its peculiar symptoms; and until we do so, investigation will lead to no satisfactory results. The term blight, of itself, expresses no particular disease, and defines merely the blasting or withering of plants while in a state of growth. "What is called blight," says Forsyth, "is frequently no more than a weakness or distemper in trees. This is the case when trees against the same wall, and enjoying the same advantages in every respect, differ greatly in their health and vigor, the weak appearing to be continually blighted, whilst others remain in a flourishing condition. This very great difference in such circumstances can be attributed to the different constitutions of the trees, proceeding from a want of proper nourishment, or some bad qualities in the soil, some distemper in stocks, buds or scions, or mismanagement in the pruning, &c., all of which are productive of distemper in trees, of which they are with difficulty cured;" and he states that there is another sort of blight against which we know of no effectual remedy, called the fire blast." Trees sometimes perish by great heat, when accompanied by a severe drouth, and by cold even in the spring, when so rigorous as to destroy the foliage. A partial destruction or mutilation of the roots, deep planting, an uncongenial subsoil, cankers produced by bruises, neglect of cultivation, moss and vermin, do not unfrequently occasion disease having some of the marks characteristic of the fire blight; and trees which have perished from either of these causes may have been supposed to have been affected by this malady. Different diseases have been confounded together, not simply by the inattentive, but by men of experience and investigation. Judge Buel, in a communication to the *New-England Farmer*, in 1828, ascribes the fire blight to an insect, and refutes all theories attributing it to any other origin. He probably had only examined trees injured by the insect *Scolytus pyri*, described by Professor Peck. An article from a correspondent in New Jersey, referring to and refuting the opinion expressed by Judge Buel, was published the next year in the same paper. "It has been my object," he says, "for many years, to ascertain the cause of this destructive disease, but vigilant as I have been and still am, I have never yet detected any insect in the act of puncturing a tree, so as to cause fire blight." The editor of the *Genesee Farmer* in 1833, discusses this question, and after reviewing the opinions of different observers, gives his views, which coincide with those of Judge Buel. It does not seem to have been conjectured by either of these writers, that there were or might be two distinct diseases originating from different causes, and producing the same or similar results. Though they are very dissimilar, yet the one, we believe, is often mistaken for the other. Downing, in his treatise upon Fruit Trees, has described what are the peculiar symptoms of each.

The origin of the fire blight has been much discussed, and various theories have from time to time been advanced, meeting

with a share of support and approbation. It has been ascribed to "electricity and atmospheric influence," "to a stroke of the sun," "to old age or long duration of varieties," "to a sudden freezing of the bark," and "to an epidemic transmitted from place to place by the air."

We would, briefly as possible, examine these several opinions.

The article referred to, published in the *New-England Farmer* in 1829, is written with considerable ability, and as it embraces a statement of facts, important in our inquiries, which may seem to warrant the belief of the writer that electricity or atmospheric influence is the cause of the disease, we will give extracts of some length from it. "An exotic pear, such as the *Vergalouse*, the *Beurre*, the *St. Germain*, or the *D'Anche*, grows very luxuriantly in our climate. They have the capacity of attracting a greater quantity of fluid nutriment than those trees which are indigenous. The fire blight occurs more frequently after a summer shower in July or August, and during the sunshine. A shower falling on any plant, whilst the sun shines fiercely, is always more or less injurious." "I have actually seen the end of a limb perish with fire blight before my eyes whilst examining it. I once stood under the shade of a fine *St. Germain*, while I was directing my gardener how to amputate the limb of a similar tree, which stood about ten feet from me; I discovered the blight immediately after one of those hot showers; and as is my constant practice, I hastened to the tree, that the injured limb might be instantly separated. Whilst I stood under the St. Germain before mentioned, my eye rested on the horizontal branch before me, and to my surprise I saw the leaves change color from a dingy yellow to a dark brown! I had the limb cut off far below the blight and saved the tree, as I did the one opposite to me."

"While the sap of plants is confined within the proper vessels, it possesses the healthy qualities necessary to it; but if a rupture takes place at the tender extremities of the limbs, or should no rupture occur, but merely a detention or congestion of sap be the consequence of the powerful rarification, which the hot moist atmosphere causes, the sap, by coming and remaining more immediately in contact with external gases, will acquire deleterious qualities wholly unfit for the uses of the plant. Native pears are very seldom touched by this malady, because, in our apprehension, the sap vessels are capable of resisting the various changes of our atmosphere. This is not the case, however, with all our fruit trees, even of those which have for centuries been acclimated. The quince trees, for instance, are attacked by a species of fire blight, which often injures them very materially, and I have seen the young wood or twigs of the apple tree scathed as if by lightning. In truth the electric fluid seems to be the most likely agent to produce a phenomenon of the kind. When the air is charged with electric matter, the acetary fermentation of the vegetable fluids is more active, and they undergo a change at such times. This is a case well known even to the ignorant, who usually attribute it to thunder. Congestion does not always take place at the extremities of all plants. In the cherry and plum trees, it is confined entirely to the bark of the trunk or to the thickest part of the principal limbs. Tall trees are more subject to this disease of the bark, than those which have short bodies or trunks. It proves therefore that a highly rarified atmosphere, accompanied by show-

ers during the hottest period of the day, is injurious to the sap, as it rises to the most succulent parts of the limbs, and to the exposed surface of the bark of the cherry or plum."

Now it seems to us very evident that if the electric fluid, was the cause of the disease, it would act in the first place upon the leaves, they being the most delicate and exposed organs, and the extremities would invariably manifest the injury sooner than the "trunk or the thickest part of the limbs." There is no reason, certainly, why it should affect different kinds of fruit in different parts, in the manner supposed; and this "agent," we should presume, would be more likely to produce its effects upon tall trees than those of lesser growth. "A highly rarified atmosphere" would be most detrimental, where its circulation is less free, or more pent in by vegetation, and the trunks of those having short bodies, and limbs spreading more horizontally, would be as liable to suffer, as those having a more erect growth. If the facts are correctly stated, they are to be ascribed to a more consistent cause. Some vegetable fluids, extracted from the fruit or the plant, or existing in them in a state of partial decay, undergo fermentation, but nothing similar takes place with the sap of a healthy tree, and though the fermentation may be greater, when the air is charged with electric matters, there is no connection between the effect, and that which is produced in the sap of a tree when attacked by disease. The premises would not warrant the conclusions. The circumstance related as to the change in the appearance of a "fine St. Germain," which occurred under the eye of the observer, and to his great surprise, furnishes no evidence that the attack of the disease was so sudden, and its effects so decisive as he supposed. Indeed, the statement as to color, shows that the tree had been diseased for some time previously. He saw the leaves change from "a dingy yellow to a dark brown!" "A dingy yellow" is not the color of the leaves of a healthy tree, and when they present that appearance in mid-summer, it is generally the precursor of speedy decay. Those who have observed the fire blight only at that stage when, though the tree may have previously had, upon slight examination, the appearance of health, the fruit and leaves begin to perish, might well suppose that it had but just commenced its attacks, whilst in fact, it had existed for months, and was manifesting its final and fatal effects. "A shower falling upon any plant, when the sun shines fiercely," is frequently injurious, and produces a more decided and sudden change in the foliage of that which is diseased than of the healthy.

Thacher mentions, in his *Orchardist*, that Mr. Cooper, of New-Jersey, discovered that iron hoops hung upon the branches of his trees, invariably preserved them from blight. This remedy is somewhat singular, and its success would seem to require some additional confirmation, though so great is said to be the benefit derived by pear trees from iron, that we are prepared to hear that it will produce any result desirable; but if electricity is the cause which produces the disease, it would be difficult to explain in what manner that material should preserve the tree from harm, which most attracts it.

It is true, we believe, that the disease is less destructive to native varieties than to those of foreign origin; and such being the case, we should endeavor to take some advantage of it. Native pears are generally accidental seedlings, mature their wood comparatively early, and are hardy; the fo-

reign are mostly cross bred seedlings, and are less hardy, and when reared by the method adopted by VAN MONS, very tender. Most of our foreign pears came from countries where the temperature is more equable than here, and are unsuited, in a greater or less degree, to our soil and climate. A "want of constitutional fitness" may exist, to which little or no attention is paid. In England, regard is had to the habit of the variety, whether it is of strong or weak growth, whether hardy or tender, whether it will flourish as a standard or requires the aid of a wall. Inquiries of this kind, though of greater importance to us, variable as our climate is, are seldom made here. A great eagerness has prevailed to obtain all the new kinds of foreign origin. This might be well enough, provided it does not lead us to overlook our native varieties,* and undervalue their peculiar merits for general cultivation. What is true of the apple, we believe to be equally true of the pear, that its varieties flourish more perfectly in the district and country where they originate. Many of those of high repute abroad, which have come to us, have disappointed our expectations, and are equalled, if not surpassed, by many which have originated here, which in some instances have failed to attract the attention of cultivators for years. Let the amateur consult his own taste and pleasure, and try what experiments he chooses; but for others it is more desirable to rear such trees as are most hardy, and will produce fair crops of good fruit; and we believe they would meet with less disappointment and more uniform success, if they paid greater attention to the culture of our native varieties.

* The past season has brought into notice here three excellent pears, originating in this State: the *Pratt*, and *Knight's*, and *Abbott's* seedlings; the two former of which have been in bearing many years.

The opinion, ascribing the disease to a stroke of the sun, is of an older date. It is mentioned by FORSYTH and in MILLER'S *Gardener's Dictionary*. FORSYTH says, "there is another source of blight, that sometimes happens pretty late in the spring, and is called fire-blast. This is generally thought to be occasioned by certain transparent flying vapors, which may sometimes take such forms as to converge the sun's rays in a manner of a burning glass, so as to scorch the plants they fall upon, and this in a greater or less degree in proportion to their convergency. This generally takes place in close plantations;" and he recommends that a clear healthy situation be selected, and the trees planted at such distances as to give free admission to the air. PRINCE, in his treatise on trees, remarks, that "the pear is subject to one malady peculiar to itself, commonly called the fire blight, or Brulere, which attacks trees, generally commencing at the extremities of the branches and extending downwards. This is caused by a stroke of the sun, which extracts the sap from the uppermost branches of the tree, or from such as are most exposed to its influence, with more rapidity than it can be replaced; or from powerful rays of the sun heating the sap," and he recommends, that the trees should be planted in pear orchards much closer than in those of the apple.

Observation has established the fact that the disease does not commence at the "top or extremity," and when the trees are in foliage, but manifests itself by black and withered patches of bark upon the trunks or limbs, before a single leaf appears; and we hardly credit that any "hollow clouds" should be so actuated by malice aforethought as to converge the sun's rays to fall particularly upon close plantations. The following objections against this theory are by

JUDGE BUEL: "I do not believe it is produced by the sun; because its attacks are indiscriminate, where the sun's rays are obstructed by foliage as well as where exposed to its rays; on the north as well as the south, on horizontal as well as perpendicular shoots; and the under as well as upper side."*

Culture of Tender Fruits in Cold Climates.

BY J. J. THOMAS, MACEDON, N. Y.

IT is familiar to horticulturists, that warm low valleys, are more subject to night frosts than more elevated localities. Objects at the surface of the earth become chilled by the radiation of heat to the clear sky above, and cool by contact the surrounding air,—which thus becoming heavier, rolls down the sides of declivities, and settles like the waters of a lake in the lowest troughs. This effect is farther increased by the stillness which prevails in those sheltered places, favoring the more rapid cooling, by radiation, of the exposed surfaces; while on hills the equilibrium is partially restored by the currents of wind. Independently of these causes, vegetation is more likely to suffer in such places from the succulent or unripened growth, incident to the warmer position, and to the richer soil which more usually accumulates at the bottoms of valleys. The mucky soil also radiates heat more rapidly from its surface. The warmth in valleys, during the milder weather of winter, often swells fruit-buds, and severe cold following, destroys them. Higher and more bleak localities are not exposed to these variations, but are more uniformly cold; hence, for these five different reasons, such places are usually much the best for raising tender fruits.

These facts are familiar to many, but still are not so generally appreciated nor applied in practice, as they might be in many instances to very great advantage, in selecting grounds for orchards and gardens. Very erroneous conclusions even, have been adopted in consequence; and large parts of the Northern States are destitute of the finest fruits, from mistaken notions as to the practicability of their culture, or of their endurance of the climate.

Instances, showing in a strong light, the principles already alluded to, may be of use to those who have given little attention to the subject.

The existence of colder air in valleys, on still, clear nights, has been obvious to every observing person riding rapidly over a rolling or broken face of country. The thermometer has often shown a difference of many degrees between a creek bottom and a neighboring hill not fifty feet high. A very striking proof of this tendency was exhibited, at the time of a severe night frost, early in summer. The young leaves of the hickory had but partially expanded, and the fresh shoots, a few inches long, were succulent and tender. A few trees stood in a hollow about twenty feet deep, and after the frost all the leaves and fresh branches on the lower parts of the trees were black and dead, while all above the surface of this lake of cold air, were green and uninjured.

Many years ago, the writer attempted the cultivation of young peach trees, on a rich soil near the bottom of a valley. But every winter the newly set buds were destroyed,

* To be continued next month.

or not one in fifty escaped, and one-half of the young branches were often killed. Learning the cause, the trees were removed to an adjacent elevation fifty feet higher, when the difficulty was at once obviated.

In the winter of 1845–6, when the severity of cold on a clear night sunk the thermometer several degrees below zero, after the peach buds had been swelled by a few warm days, trees which stood on a hill thirty feet higher than the neighboring creek valley, lost nine-tenths of their blossoms, while on another hill twenty-feet still higher, nine-tenths escaped. The lake of cold air which covered the smaller hill, did not reach the top of the larger.

In a large portion of the State of New-York, more especially in the region of the southern tier of counties, nearly all attempts to raise the tender fruits appear to have been relinquished. The inhabitants of the larger villages and their vicinity, places mostly situated at the bottoms of deep valleys, being persons of more enterprize and means, have tried the experiment—and for obvious causes have failed—and hence the conclusion that the climate was necessarily fatal. But there is strong reason to believe, that *through all the southern counties of New-York, extending from Lake Erie to the Hudson, peaches may be raised with little difficulty*, by a proper selection of locality, and by an observance of the principles already pointed out;—that is, by selecting elevated spots, and dry and firm soils, and avoiding mucky ground in valleys. In the town of Spencer in Tioga county, N. Y., near the head of Cayuga inlet, peaches have withstood the climate and done well, at an elevation of 700 feet above Cayuga lake. A striking instance was shown the writer last summer in Cohocton, Steuben county. The river valley in that town, though many hundred feet above the level of the sea, is much lower than the surrounding country, being flanked by hills about 500 feet high. In the valley, the peach can not be cultivated, the trees having been completely killed to the ground, in winter. But on one of the neighboring hills, 500 feet above, and probably 1200 feet above the sea, an orchard has been planted on good soil, which entirely escapes, and yields regular crops of fruit. In the northeastern part of Pennsylvania, probably twelve or fifteen hundred feet above the level of the ocean, in the summer of 1835, after one of the severest winters for twenty years, the only two peach trees observed in traveling many miles, were full of peaches; while the same winter, in Stroudsburg valley, a large tree was noticed killed down to the ground. While those hills are often covered with snow throughout the winter, the valleys are subjected to thaws, and hence become more unfavorable to tender vegetation.

Most of these cases show the great advantages of elevated sites. A dry and firm soil is, however, quite important. The influence of a compact knoll, rising scarcely above the rest of the field, has saved the corn which grew upon it; while on the more mucky and spongy portions of the rest of the field, radiating heat more freely, the crop has been destroyed. A successful cultivator of drained swamps, told me he could never plant such lands with corn safely till two or three weeks after the usual time of planting in common soils on an equal level. These influences apply with greater force to tender trees. Succulence and lateness of growth, caused by such soils, are always unfavorable to the endurance of cold; while a hard, dry soil, at the same time that it produces a less rapid growth, causes also an earlier cessation, and the young wood becomes matured and harden-

ed before severe frosts. "Many kinds of herbaceous plants and small shrubs," says A. J. Downing,* "may be naturalized on *dry rock-work*, or aggregations of stones mingled with soil, where they are found to thrive perfectly. We observed in the Botanic Garden at Cambridge, an *Azalea indica* and a species of *Erica*, that had braved the exceedingly low temperature of 30 degrees below zero, the past winter, having been planted several years previously in a mass of rock-work, where they had annually matured their wood in the most perfect manner."† The succesful cultivation of the peach and grape, on the gently swelling hills called *mounds*, in the westeru prairies, while the crops are destroyed by frost on other lands, more fertile, affords another example. In Lycoming connty, Pa., on the banks of the Loyalsock, a creek so rapid that no muck is deposited, but fine dry soil, peaches have been raised, though the cold is often intense.

It will be observed that in the preceding remarks, the influence of *large bodies of unfreezing water*, in softening the severity of the cold, in chilling the dangerous warm air which starts the buds in winter, and which afford great protection by the screen of fog which they spread before the morning sun, has not been taken into account. This influence, where it exists, will, in some cases, reverse some of the preceding rules. J. J. Thomas.

Macedon, 3 mo., 1847.

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[We commend the foregoing sound advice to planters of fruit, in all districts of country where the effects of frost are disastrous. In traveling through part of this State, in the summer of 1836, which followed the coldest winter known in New-York for many years, we saw, continually, an abundance of facts verifying Mr. Thomas' observations. That season was one remarkable every where for the failure of the peach crop, in consequence of the excessive cold of the previous winter—yet we noticed that on the high ridges and mountain ranges, the trees had escaped all injury, and bore abundant crops.—Ed.]

Notes on some Select Annuals.

BY A DISCIPLE OF FLORA, NEW-YORK.

Dear Sir—Just at this season, no doubt, some of your readers, who may be novices in floriculture, will be looking over the seedsmen's catalogues, in the pleasing hope of selecting something to give gaiety, brightness and profusion of blossom to their flower gardens. I remember how much I used to be puzzled with fine botanical names, and at last selected in a good deal the same way that I suppose a person buys a ticket—trusting to good fortune a great deal, and to knowledge of the matter in hand very little. The result is often very similar in both cases. It is by no means an uncommon occurrence, when you think you have purchased the seed of some new annual flower, the Latin name of which gives you not even a glimmering notion of its character, to find that the plants produced have coarse leaves, and an insignificant bloom. I have, therefore, thought I might use my little experience to the advantage of those of your readers who

* In Hovey's Magazine.

† The skillful cultivator will avoid all *unnecessary* deprivation of *fertility*, if he regards the size and quality of his fruit.

are yet *beginners* in gardening matters, by giving them a select list of about *forty of the best annuals*, that I have tried and found really handsome, easily grown, and well worthy of cultivation.

ANAGALLIS INDICA, *Indian Anagallis.*—Dwarf, trailing habit, flowers in July and August. Flowers blue.

AGERATUM MEXICANUM, *Mexican Ageratum.*—Upright habit, height a foot and a half. July and Aug. Flowers pale blue.

ARGEMONE GRANDIFLORA, *Large-flowered Argemone.*—Habit branching, thistle-like leaves, large poppy-like flowers, 2 ft. high. August.

BARTONIA AUREA, *Golden Bartonia.*—Habit spreading, large brilliant golden blossoms, suitable for beds or masses, 1 ft. high. August.

BRACHYCOME IBERIDIFOLIA, *Swan Daisy.*—Habit trailing, leaves small, height six inches, color changes blue and pink to white. July to Sept.

CACALIA COCCINEA, *Scarlet-tassel Flower.*—Habit dwarf-tufted, blossoms tufted like little tassels, orange-scarlet, one foot high. July to October.

CALANDRINA SPECIOSA, *Beautiful Calandrina.*—Habit trailing, flowers bright rose-color, brilliant in the sun, height 6 inches. July and August.

CALENDULA OFFICINALIS, *English Pot-Marigold.*—The prettiest and dwarfest of all marigolds; always in bloom, makes a good mass, one foot high. July till Nov.

CALLIOPSIS BICOLOR, *Golden Coreopsis.*—Habit erect, branched, flower yellow with dark brown centre, 2 feet. July to Oct.

CALLISTEMMA HORTENSE, *China Aster.*—Well known; some of the double-quilled sorts, called *German Asters* (of many colors,) are superb; 1 foot. Aug. to Sept.

CLARKIA ELEGANS, *Elegant Clarkia.*—Habit branching, flowers delicate and pretty, 1 foot high. June and July. Should be sown very early, or in the fall previous.

COLLINSIA BICOLOR, *Two-colored Collinsia.*—Habit erect, flowers numerous and pretty. June and July. White and lilac.

COLLINSIA GRANDIFLORA, *Large-flowered Collinsia.*—More dwarf and spreading than the last; flowers blue and purple; one foot high; makes a pretty mass.

CONVOLVULUS MINOR, *Dwarf Convolvulus.*—Habit spreading or trailing; flowers like little "morning glories," particolored, blue, white, and yellow; one foot. July to Sept.

DELPHINIUM AJACIS, *Double dwarf Larkspur.*—Erect; flowers nearly as handsome as hyacinths; of various shades—white, purple, rose, blue, &c.; Should be sown in September to do finely; one foot. July.

ERYSIMUM PEROFFSKIANUM, *Palestine Mustard.*—Erect, showy; deep orange blossoms, like single wall-flowers; makes a rich mass. June.

ESCHOLTZIA CALIFORNICA, *Californian Poppy.*—Habit dwarfish and spreading; blooms all summer; flowers very glossy, bright yellow; one foot; makes a good mass. (E. CROCREA is deep orange-colored.)

EUTOCA VISCIDA, *Viscid Eutoca.*—Habit erect; branching; flowers sapphire blue; height one foot. July and Aug.

GILIA TRICOLOR, *Three-colored Gilia.*—Pretty; habit erect; fine leaves; flowers purplish or white, with dark eye. June, July.

GILIA CAPITATA, *Blue Gilia.*—Habit branching; flowers small, in dense heads, pale blue; two feet. July to Sept.

GYPSOPHILA ELEGANS, *Elegant Gypsophila.*—Pretty; dwarfish habit, trailing; flowers numerous, small, pale pink; six inches. June, July.

HELICHRYSUM MACRANTHUM, *Large Everlasting Flower.*—Habit erect; flowers white, tipped with red; two feet. July to Oct.

HIBISCUS AFRICANUS, *African Hibiscus.*—Erect, branching; large mallow-like blossom, color cream with rich brown centre; one and a half feet. July to Oct.

IPOMEA QUAMOCLIT, *Cypress Vine.*—One of the most delicate and pretty climbers; flowers like crimson stars; 8 feet. Aug. Nov.

IBERIS ODORATA, *Candy Tuft.*—Branching; there are two sorts, white and purple; both pretty, and abundant bloomers; one foot. June, July.

KONGIA MARATIMA, *Sweet Alyssum.*—Habit resembles mignonette; abundance of small white flowers from June to Nov.; six inches; makes a pretty mass.

LIPTOSIPHON DEMI-FLORUS, *Close-flowered Liptosiphon.*—Habit dwarf, slender; flowers rosy lilac; one foot. July. (Should be planted early.)

LUPINUS NANUS, *Dwarf Lupin.*—Erect; purple and blue; six inches. July to Sept.

MALOPE GRANDIFLORA, *Large-flowered Malope.*—Habit erect; flowers mallow-like, asp-shaped, large and pretty; two feet. July and Aug.

NEMOPHILA INSIGNIS, *Beautiful Nemophila.*—Habit dwarf, spreading; flowers like small cups, delicate blue and white; makes a pretty bed; six inches. June.

PETUNIA PHŒNICIA, *Petunias.*—Several colors, from white to rich purple; makes rich ever-blooming masses; one foot. June to Nov.

PHLOX DRUMMONDII, *Drummond's Phlox.*—Habit dwarfish, spreading; charming for masses or beds; always in bloom; varies in shade from rose to purple; one foot high.

PORTULACCA SPLENDENS, *Splendid Portulacca.*—Dwarf, trailing; leaves small; flowers large, rosy crimson; makes a rich bed; six inches. July to October.

PORTULACCA THELLUSONI, *Scarlet Portulacca.*—

Exactly like the last, but with scarlet blossoms. July to October.

SCHISANTHUS PINNATUS, *Wing-leaved Schisanthus.*—Erect, branching; flowers prettily cut, blue, purple, and yellow; one and a half feet. July and August.

SILENE PENDULA, *Pendulous Catch-fly.*—Dwarf, bushy habit; flowers pink-like; blooms a great deal. June to Aug.

TROPŒOLUM ADUNCUM, *Canary-bird Flower.*—A climber; curious and pretty; light yellow blossom; grows freely and blooms abundantly; 10 feet July to Sept.

Yours, &c.,

A DISCIPLE OF FLORA.

New-York, March, 1847.

Action of the Salts of Iron on Vegetation.

BY ADOLPHUS BROGNIART, MEMBER OF THE ACADEMY OF SCIENCES, PARIS.

Translated from the REVUE HORTICOLE for this Journal.

MEN of science and agriculturists have not hitherto coincided in opinion regarding the action of the Salts of Iron on vegetation. We are indebted to EUSEBE GRIS, Professor of Chemistry at Chatillon (Coté d'Or,) for numerous experiments, which are quite conclusive. To enlighten our readers respecting the benefits derivable from the Salts of Iron, especially sulphate of iron, when applied to diseased plants, we have concluded to submit to their inspection the report made by MESSRS. PAYEN and ADOLPHE BROGNIART to the *Central Society of Agriculture.*

"The *Central Society of Agriculture* directed Mr. PAYEN and myself, to report on the communications of M. EUSEBE GRIS, in relation to his experiments concerning the action of the Salts of Iron on vegetation. We have repeated the most of these experiments, and varied them in order to ascertain the rationale or mode of action of these salts, while watching their effects on the plants of different families in different states of health. These numerous and protracted trials have created the delay of the report due to the society.

"We should prefer to modify some of these experiments, to extend their number, and to vary the attending circumstances; but such as we have made, seem sufficient to inspire us with great confidence in the results announced by M. GRIS, in the two pamphlets he has published on this subject; and which, added to our results, obtained according to his indications, will enable others to appreciate the researches of their author.

"These rescarches comprise:

"1st. The influence of the different Salts of Iron (sulphate, chlorate and nitrate,) applied in solution to the roots of plants affected with a disease known to cultivators as *chlorosis*, or diseased condition of the foliage,* which consists of a defect of the green coloring matter of the leaves, and in the yellowness or whiteness of these organs;

"2d. The direct action of these same salts, applied in weak solution, to the diseased leaves themselves;

"3d. The action of these salts on healthy plants.

"The first experiments of M. GRIS regarded delicate, diseased plants, whose discolored, white or yellow leaves indicated a radical change in the organization of the interstitial base, structure or *parenchyma* of the leaf; a malady, which affects certain plants, as the *Hydrangea*, *Calceolarias*, *Primroses* and *Geraniums*, and which almost always induces a protracted decay and final death of the plant, unless the soil in which it is cultivated is changed. We must not confound this modification of tissue, which exhibits itself in a plant which has been healthy for years previous, with those modifications of permanent colorings, which produce the stripes or marblings in many plants that are cultivated for the sake of the striking and odd contrast of the discolored with the adjoining parts, the green color of which equals in intensity that of a healthy plant. These stripes are varieties

* Yellows of this country?—TRANSLATOR.

of organic maladies peculiar to the individual plant, which seem to be, in general, inherent to the individual structure, and are, like it, multiplied by grafts and cuttings.

"These plants are not affected by the temporary changes of an undoubted disease, and the term *chlorosis*, and the experiments of M. Gris, are in no way applicable to them; their pale or yellow stripes derived no change from the action of the Salts of Iron.

"The chlorotic plants, on the contrary, cultivated in pots, and watered with a solution of the sulphate of iron, containing from 2½ to 5 drams of this salt to a quart of water, have, in almost every instance, after two, three or four waterings, gradually recovered their natural green color, the quantity of solution applied to each one varying from half a gill to a pint, according to the size of the pot in which the plant is cultivated, and the strength of the plant itself; but the effect has been more or less prompt and more or less marked according to the nature of the plant.

"Thus a very sickly *chlorotic* Geranium, conjointly with a *Calceolaria excelsa*, *Stachys mollissima* and *Malva capensis*, in the same condition, derived a prompt effect from three waterings, and entirely recovered its color at the end of three weeks; three other plants, *Satureia*, *Diosma* and *Malaleuca*, alike quite yellow, acquired a return of natural color more sluggishly, a beautiful green being developed in about two months; a *Pimelea*, on the contrary, regained its color imperfectly, and many of its leaves still remain yellow.

"It is worthy of remark, that if the parenchyma, during the progressive functional changes of the plant, becomes so attenuated that the leaf is almost transparent and on the point of withering, the susceptibility of being made green ceases, and the favorable influence of ferruginous solutions can only be manifested on the new leaves that may be developed.

"A plant, cultivated in the open ground, in the *Jardin des Plants*, offered a striking illustration of this fact: this was a vigorous bush of a *Napæa levis*, so diseased in the month of May, that its whitish-yellow, thin, and almost transparent leaves, were partly crisped and desiccated, and its buds were as white as the centre of a cultivated lettuce; a solution of nearly one dram of sulphate of iron in three gills of water, twice applied, sufficed to indicate a change in the color of the leaves not too much withered; a third and more liberal watering restored vigor and natural color to most of the shoots; but this quantity was not sufficient to affect permanently so large a bush, presenting more than thirty branches, so that its leaves are already becoming marbled with yellow.

"Plants in the open ground are not favorably situated to offer *uniformly* certain results; the absorption by the roots being far from satisfactory, which may be partly attributable to the extension of their roots, and partly to the imperfect absorption of the liquid, which becomes diffused, and consequently enfeebled.

"It is probable, when the necessary proportions are understood, especially for perennial plants formed with vigorous heads, that the same conclusions will be reached as from plants in pots.

"We should not, indeed, question the action of the solutions of sulphate of iron, when applied to *chlorotic* plants; but does the sulphate of iron act directly, as a ferruginous salt, or, re-acting on the substances which compose the soil, does it produce its effect as a sulphate of lime? This objection has been urged to M. Gris, and he has sought to answer it by various experiments. He affirms that he has obtained like results from solutions of the chlorate and of the nitrate of iron, while the sulphate of lime, on the contrary, effected no change in the color of chlorotic plants.

"Many of the plants tried by him, and many of those also submitted to the experiments of your commissioners, were cultivated in pure peat-earth, (terre de bruyère pure,) and the most signal results were observed, although the soil was almost entirely free from calcareous matter.

"Finally, the application of the ferruginous solutions directly to the chlorotic leaves themselves, by bathing, seems to resolve every doubt as to their positive action on the tissue of the leaf.

"This process, which M. Gris practiced subsequent to that of absorption by the roots,

requires the employment of much feebler solutions, in the proportion of one-fourth to one-half a dram of the sulphate of iron to a quart of water; this solution may be applied, either partially or generally, by means of a brush or sponge, to the upper or lower surfaces of the leaves. If we experiment more liberally, the excess of the solution applied to the leaves, if allowed to moisten the earth, may be absorbed by the roots.

"A solution more concentrated, almost always affects the leaves, and fixes brown spots on them.

"The action of the solutions is more or less rapid, according to the nature of the leaves and the permeability of the epidermis or outer surfaces, and, also, according to the affinity or repulsive quality of the surface of the leaves; in which latter case the absorption can only be effected by rendering the liquid more viscid and consequently more adhesive to these surfaces.

"The soft leaves, like those of the scarlet geranium, *Pelargonium inquinans*, the primrose, *Primula elatior*, and artemesia, *Chrysanthemum indicum*, are very sensitive to the action of the Salts of Iron; a single application producing, at the end of two or three days, a renewal of green to the leaf wherever touched by the solution; and, in an example of a very chlorotic geranium, every line painted on the surface of the leaf by a brush was rendered beautifully distinct through the intensity of the green color.

"This action of very diluted solutions of sulphate of iron on the chlorotic leaves of plants, belonging to a large number of different families, as the *vines* and *pears*, which are subject to this malady, is an unquestionable fact which M. Gris has sustained by repeated proofs, and which your commissioners have confirmed on a great number of plants.

"Here, none of the reactions peculiar to the soil take place; the solution is directly absorbed by the organ which is to be modified; it is absorbed like every other aqueous solution; if it be too concentrated, it changes the tissue; if it be weak, it acts favorably on the diseased substance. It is to be farther remarked, while the leaves are renewing their color by the absorption of the Salts of Iron through the roots, that the parts adjacent to the nerves of the leaves are primarily colored, and the networks of the leaves secondarily, in the most distinct manner; on the contrary, when the coloring of the chlorotic leaves is the result of absorption through their surfaces, the portions colored are distributed in patches or spots bearing no relation to the nerves of the leaves.

"M. Goeppert had already observed similar results in the poisoning of plants by Prussic acid, acordingly as the impression was produced by application to the roots, or to the epidermis of the leaves in a state of vapor.

"It is quite important to demonstrate the superiority of the action of the salts of iron on vegetables, obtained by absorption through the epidermis of the leaves, as this method will be practically preferable to that of absorption by the roots, especially for trees, the absorbing extremities of whose roots extend too far or almost beyond reach, unless an enormous quantity of the solution is employed; whilst a weak solution, thrown over the foliage by means of a syringe, will, after two, three or four sprinklings, restore the leaves to their normal state, by producing, at first, green streaks, which gradually extend over the whole surface of the leaf, with judicious and continued applications.

"M. Gris assures us that he has derived excellent results from this process applied to very sickly chlorotic pear trees, (trained *en quenouille;*) we have not had occasion to test it on these trees.

"It is moreover probable that the season, during which the waterings, sprinklings or lotions, are applied, has an important influence on their action; for adult leaves, especially old and tough, appear to be less sensitive to the influence of this agent, and less susceptible of becoming green than leaves still young and tender.

"We have, also, already indicated the great difference in the action, more or less prompt and more or less marked, depending upon the texture and consistency of the leaves themselves; the leaves, with a very penetrable covering or epidermis and sponge tissue, almost immediately and with facility experience the influence of the lotions; while others, on the contrary, with

a dry or tough epidermis, and a thicker tissue, become green only after repeated bathings.

"There are then, under these different relations, studies of individual and specific details to be made, which will direct us in the application of this remedy to the different forms of vegetable maladies; but we cannot doubt the action of the salts of iron, more particularly of the sulphate of iron, on plants affected with this diseased discoloration of their green parts, designated as the *vegetable chlorosis*, nor its influence in re-establishing, in time, the natural color of these organs, (unless the malady has produced a disorganization of its tissue,) and thence, finally, confirming the natural color, in the new parts which may be developed. Under this influence and its consecutive changes, we may see the plant recover all the characteristics which indicate sound health.

"As to the action of the salts of iron on healthy plants, or on those in their natural state, it is much more difficult to determine it by the experiments of the garden, and the results we have obtained are not sufficiently distinct to allow us to consider the question as settled.

"M. Gris has cited many examples of vegetables and grain, watered with ferruginous solutions, particularly that of the sulphate of iron, which appeared more vigorous and presented a greater weight than analogous plants which had not received these solutions.

"We have repeated these experiments on seeds sown this spring, both in the open ground and in pots, and, in this instance, in different kinds of earth; in the open ground we have sown spring corn, oats, peas, beets, buckwheat, cabbages and turnips; a part of each one of these sowings was watered with a solution of five drams to the quart, and subsequently of a dram and a half to the quart, in order that the leaves which could not escape soaking should not be injured. These waterings were repeated five or six times during the months of June and July, without producing any perceptible difference to the sight.

"We have sown in pots, barley, (*Hordeum hexastichum*,) oats, (*Avena sativa*,) pink clover, (*Trifolium incarnatum*,) rape, (*Brassica napus*,) peppergrass, (*Lepidum sativum*,) buckwheat, (*Polygonum fugopyrum*,) and love-lies-bleeding, (*Amaranthus caudatus*;) two pots of each one of these plants contained the ordinary earth of the garden; two peat soil; and two were of siliceous sand; each pot having a mouth of about seven inches and containing eight or ten roots of each plant. Every other pot was moistened with pure water, and every other residuary one was watered, from time to time, with a solution of $2\frac{1}{2}$ drams of sulphate of iron in a quart of water, of which a gill was at first applied to each pot, and subsequently two or three gills.

"There was, in general, very little difference between the two series, especially of the plants in the ordinary earth; the plants sown in the heath mould, and especially those in the sand, generally appeared to be stronger when they were watered with the sulphate of iron solution: this result was quite marked in regard to the buckwheat and cruciform plants.

"If, then, we are to regard experiment conducted on so small a scale, with some attending accidental circumstances of decided importance, it would seem that the action of the sulphate of iron would prove favorable on thin and sandy soils; but we cite this result, with our declared restrictions, merely to indicate the interest which more extended experiments might develop in sterile and sandy soils, by means of feeble solutions ($\frac{1}{2}$ or 1 dram to the quart, so as not to injure the leaves,) repeated two or three times, and in such quantity that every square yard should every time receive from three to four quarts of the solution.

"It is evident that, as this part of the question, so eminently interesting in an agricultural point of view, is the least advanced, that renewed experiments are needed; and with these M. Gris has been occupied during the current year.

"The results of the researches to which M. Gris has devoted himself with so much zeal and perseverance for many years, appear to be these:

"1. That the salts of iron, (sulphate, nitrate, chlorate and acetate,) whether absorbed into plants by the roots or the epidermis

of the leaves, exert a specific action on the coloring matter of the diseased or altered leaves of plants, denominated *chlorotic;* that they restore the natural color of these organs, and thus contribute to re-establish the health of the plant, a result which is obtained quite independently of a union of these acids with other bases, as lime or soda; and that, in this respect, waterings and sprinklings of suitable solutions of these salts can be very usefully employed in horticulture, and also for general cultivation on vegetation subject to this form of disease, such as *vines, pears* and other fruit trees.

"2. That these salts, although their action is not as prompt and as apparent on the plant in its natural healthy state, appear in many cases to operate beneficially on its growth; that different circumstances, consisting chiefly in the nature of the soil and the plant, particularly merit the specific attention of agriculturists; and that new experiments are necessary to determine to what extent the salts may be available in agriculture, although the use of pyritous ashes, already employed in many localities, offers a favorable indication for the employment of sulphate of iron under other circumstances.

"The extended labors of M. Gris on this subject, the numerous experiments to which he has devoted himself to prove the facts we have collected, the knowledge of which he has given proof, and the perseverance with which, for many years, he pursued a result which seemed to him important, and which he has in reality attained, appear to us to merit in a high degree the encouragement of the Society, and we propose, as the most flattering evidence of its esteem for his labors, to place him on the list of candidates for the title of Corresponding Member."

Adolphe Brogniart,
Membre de l'Academie des Sciences.

M. Gris has since addressed the following note to the *Royal Horticultural Society of Paris*, which we find in their *Annales:*

"Allow me to beg my colleagues, and horticulturists generally, who wish to repeat my experiments, to operate with the precautions and in the doses given in my notices previously published. The Society will understand that I cannot be responsible for any success or failure growing out of applications too weak, or too strong, when the temperature is too low, upon glaucous foliage that sheds washes ordinarily applied, etc.; this would be the subject of interminable discussions.

"In all experiments, carefully made, like those in the royal garden, I distinctly state that ninety-five cases in every hundred have been successful. This year not a single leaf has been blackened or discolored by the application of the salts of iron, in the long series of experiments to which I have devoted myself in this establishment.

"In the mean time the following are about the proportions to which it is necessary to adhere. 3 to 4 drams of sulphate of iron (*green copperas*) to a quart of water, for all applications to be made by watering the roots.

"One-fourth of a dram, only, (2 *grammes, seulment,*) to a quart of water, for showering or bathing the surface of the leaves. (The copperas should be dissolved just before applying the solution.)

"With one ounce of common copperas, (sulphate of iron,) we may therefore prepare 16 quarts of the solution, fit for all usual applications to the leaves of plants.

I have the honor to be, &c.,
Eusebe Gris."

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Remarks by the Editor.—We are inclined to look upon the discovery of M. Gris as detailed in the foregoing report as one of the most important made in horticultural science for many years past.

Every experienced cultivator well knows how little science has hitherto offered as remedies for any constitutional or organic diseases of plants. To prune, to improve the soil by manures, to renew it by deeper tillage, to exterminate injurious insects—this is nearly the extent of the remedial agents in common use.

In the mean time there are various maladies, like the *yellows* in the peach tree, and

the pale and sickly hue of many fruit trees and green house plants, indicating a feebleness of vital energy, which the ordinary means referred to often entirely fail to cure.

Now those who have paid the least attention to vegetable physiology are aware how *absolutely impossible it is for a tree or plant to remain healthy without the healthy action of its lungs or leaves.* Hence the obvious importance of this discovery of a specific, which directly affects the diseased organs, and gives us the power of restoring their original state of health.

Such a specific, it would appear, has been ascertained to exist in the salts of iron, and especially in the sulphate of iron, commonly known as *copperas.* M. Gris' experiments with this substance, as detailed in a work he has published on this subject, are very various and interesting, and we cannot but think them well worthy of repeated trial and verification in this country.

The *yellows*, that malady of the peach tree, so troublesome in some parts of the Union, we consider a constitutional disease, originating in bad culture or indifferent soil. As it manifests itself chiefly in a kind of chlorosis, or pale discoloration of the leaves, the trees attacked by it seem to us to be indicated as fit subjects upon which to try M. Gris' experiments. It is scarcely probable that trees thoroughly diseased with the yellows, will be restored, but the disease may be arrested and finally exterminated by timely applications to young trees.

A medical friend, one of the most distinguished practitioners in this country, to whom we have submitted this article by M. Brogniart, remarks that *iron* has been the successful remedy for *chlorosis* in the human race, time out of mind, thus giving another proof of the analogy between the animal and vegetable kingdoms.

As many of our readers will no doubt soon put M. Gris' recipes in immediate use, we beg them to keep accurate memoranda of their mode of applying copperas water, and the success attending it.

For some remarks on the application of the oxides of iron to the *pear* tree, see an article on the effects of *Iron on the Pear*, which we shall publish in our next No.—Ed.

SALT AS APPLIED TO THE PLUM TREE.

BY L. WYMAN, JR., WEST CAMBRIDGE, MASS.

I have received, recently, several communications and letters of inquiry, &c., relating to the application of *salt* to the plum tree, as a preventive to the disease, by many known, or called the "*Black Wart*," or "*Black Knot*." As a knowledge of all that relates to the culture of this delicious fruit, deserves a prominent place in the horticultural works, I must ask permission to give, through the columns of your widely extended journal, a few of the practical results of the application of *salt* in the culture of the plum tree, as tested by myself, in situations favorable to its experimental application.

Some eight years since, I was requested to examine a small orchard of plum trees, of the different choice kinds, which was located near the grounds of a former or old plum orchard. The stumps of some of the old trees were still remaining to be seen. After carefully examining the young trees, which were from three to five years old, I

found upon several, some six or eight large *knots* or *warts*, on each tree, and quite a number of smaller ones just beginning to burst the bark, or develop themselves, especially upon the young trees. I carefully examined the soil, which I found to be new or fresh, (not a worn out soil,) and of good loamy quality. I also ascertained that the trees which grew in the old orchard were all of them more or less affected with the *knot* or *wart*, some of which extended, in unsightly excrescences, over a surface of from eight inches in length to a foot, upon the limbs or twigs, and the result was, as might have been anticipated, (and was also the case with the young orchard,) an entire non-production of fruit, or none except of small, inferior quality. I recommended breaking up the soil around the roots of the young trees, to a good depth and considerable extent, late in the fall of the year; and, in the spring following, the application of two pails full, by measure, of the liquid drainage of the cespool, or "sinkspout," added to one-half bushel of good new loam, to which composition I added three pints of common salt, intimately mixing the whole together. This was then spread around the roots of each tree, care being taken not to let any of this composition lay upon the bare roots or bark of the tree, but spreading it equally around the tree in a circle of about two feet diameter. I also recommended the removal of all the *knots* or *warts* from the tree, with a sharp knife, paring the excrescences smoothly down to the natural dimensions of the limb. This pruning operation is to be performed in the spring, as early after the first flow of the sap as practicable. The application of the salt, &c. may be made either in the spring (in March) or the fall, as convenient; but the best time is in March, or at farthest not later than the middle of April.

The result of the first application, as an experiment, was about a middling crop of plums the ensuing season, and *no* appearance of the *knot or wart*, or premature dropping of the fruit.* The same mode of culture was again applied the season ensuing, with a much better result, the trees not only growing very rapidly (thus proving the fertilizing qualities of the salt, &c.) but yielding a good crop of fruit, of an increased size, and fine flavor.

The above method of culture I have applied to my own plum trees, and to other *Plum Nurseries* of which I have had the care, and with the most satisfactory result. I am favorably impressed with this method of plum culture, and the salt alone may be used in small quantities, in the winter season, at several applications, without the liquid drainage of the sink, if the trees stand in good soil, with very good results. And the fortunate possessor of a garden of choice plum trees, by following the above suggestions, need not fear the "BLACK KNOT OR WART." L. WYMAN, JR.

West Cambridge, Mass., March, 1847.

SOME SELECT LISTS OF ORNAMENTAL SHRUBS.

As the planting season approaches, we are warned by various hints and inquiries from our correspondents, that "some information relating to a choice of a few of the most popular hardy shrubs, of easy culture, would be acceptable to numerous readers"—many who are just beginning the improvement of

* The *knots* or *warts*, if smoothly cut off after the spring sap has commenced flowing, will readily heal, and by the next season present a healthy appearance.

their grounds—laying out gardens for the first time, or extending their pleasure grounds. There are, in commercial gardens, some hundred species of shrubs, most of which possess points of interest, in foliage, flower or fruit, and nearly all deserve a place in a large shrubbery. Only a few of them, however, are needed for small gardens, and among such, requiring only good common soil, and no protection in winter, in this latitude, we give the following list, as comprising *the most desirable 25 hardy deciduous shrubs:*

Pink Mezereon, *Daphne mezereum;* Japan Quince, two sorts, white and scarlet, *Cydonia japonica;* Double Almond, *Amydalus pumila pl.;* Double Purple Tree Pæony, *Pæonia moutan Banksii;* White Persian Lilac, *Syringa persica alba;* Chinese White Magnolia, *Magnolia conspicua;* Soulange's Magnolia, *M. soulangiana;* Sweet-scented Magnolia, *M. glauca;* White Fringe Tree, *Chionanthus Virginica;* Garland Deutzia, *Deutzia scabra;* Carolina Syringo, *Philadelphus grandiflorus;* Broad-leaved Laburnum, *Lytissus laburnum latifolia;* Rose Acacia, *Robinia hispida;* White Tartarian Tree Honeysuckle, *Lonicera tartarica;* Red Tartarian Tree Honeysuckle; Double White Hawthorn, *Crategus oxycantha, alba pl.;* Double Pink Hawthorn; Sweet-scented Shrub, *Calycanthus florida;* Dwarf White Horse Chestnut, *Pavia macrostachya;* Fragrant Clethra, *Clethra alnifolia;* Oak-leaved Hydrangea, *Hydrangea quercifolia;* Venetian Sumac, *Rhus cotinus;* Purple Burning-bush, *Euonymus atropurpureus;* Buffalo Berry, male and female, *Shepherdia argentia.*

The foregoing will furnish a succession of flowers or ornamental fruit from March to November.

A selection of hardy deciduous shrubs of rapid and bulky growth, suited for masses or screens, for immediate effect, is the following: Common Privet, *Ligustrum vulgare;* Carolina Syringo, *Philadelphus grandiflorus;* English Fly Honeysuckle, *Lonicera xylosteum;* Cornelian Cherry, *Cornus mascula;* Common White Lilac, *Syringa vulgaris, alb.;* English Filberts, *Corylus avellana;* Common Buckthorn, *Rhamnus cathartica;* Sea Buckthorn, *Hippophea rhamnoides.*

A few of the finest hardy vines, or climbing shrubs, are the following: Large Flowering Trumpet Creeper, *Bignonia grandiflora;* Queen of the Prairies Rose, *Rosa ratiæfolia;* Chinese Wistaria, *Wistaria sinensis;* Sweet-scented Clematis, *Clematis flammula;* Double Purple Clematis, *C. verticella, pl.;* Monthly Fragrant Honeysuckle, *Lonicera belgica;* Chinese Twining Honeysuckle, *L. flexuosa;* Yellow Monthly Trumpet Honeysuckle, *Lonicera frazerii.*

The following is *a list of hardy shrubs, remarkable for the fragrance* of their flowers: Mezereum, *Daphne mezereum;* Fragrant Clethra, *Clethra alnifolia;* Missouri Currant, *Ribes aureum;* Sweet-scented Magnolia, *Magnolia glauca;* Chinese White do., *M. conspicua;* Chinese Purple do., *M. purpurea;* Soulange's do., *M. soulangiana;* Common Syringo, *Philadelphus coronarius;* Sweet-scented Shrub, *Calycanthus florida. Fragrant vines or climbing shrubs:* Persian and other Lilacs; Sweet-scented Clematis, *C. flammula;* Chinese Wistaria, *Wistaria sinensis;* Chinese Twining Honeysuckle, *Lonicera flexuosa;* Monthly Fragrant do., *L. Belgica;* White Jasmine, *Jasminum officinale.*

A list of hardy shrubs that will grow in wet places: Willow-leaved Sporia, *Sporia salicifolia;* Tomentosa do., *S. tomentosa;* Swamp Globe Flower, *Aphalanthus occidentalis;* Leatherwood, *Dirca palustris;* Sweet Willow, *Salex lucida,* and all other willows;

Clethra, *C. alnifolia;* Spicewood, *Laurus benzoin;* Winterberry, *Prinos verticillatus.*

A list of hardy shrubs that will grow in dry, poor soil: Privet, *Ligustrum vulgare;* Buckthorn, *Rhamnus catharticus;* Buffaloberry, *Shepherdia argentia;* Bloody Dogwood, *Cornus sanguinea;* Snowberry, *Symphoria racemosa;* Jersey Tea, *Ceanothus americanus*, &c.

FOREIGN NOTICES.

A "MOUTH-WATER" FOR POMOLOGISTS.—We find in a late number of the *Revue Horticole*, the following account of a splendid new cherry brought to light in the interior of France. If it sustains the character given, it will rank at the head of all cherries for size and beauty, and probably will equal any of the large varieties in flavor. Our outline is an exact copy of the plate accompanying the description. The color of the fruit (*beau rouge vermillion*) is as striking as its size.

As the first few trees of this superb new fruit were only offered for sale in France last autumn, we presume it will not find its way to this country till the autumn of the present year. In the mean time, the most *ardent* of our pomological friends must be satisfied with the description which follows.—ED.

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GREAT BIGARREAU OF MEZEL. *Bigarreaux Monstreaux de Mezel.*—This magnificent variety has been discovered at *Mezel*, a village of Limague, a short distance from Clermont-Ferrand.*

The history and description of this new fruit were given, on the 5th of July, to the *Horticultural Society of Auvergne*, in the report of M. H. LECOQ, vice-president of the society. We extract here the part relating to this tree.

* Puy de Dôme, central France.—ED.

Fig. 107. *Great Bigarreau Cherry.*

"Our honorable colleague, M. Ligier de la Prade, had frequently spoken to us of a new cherry which he had observed on his estate at Mezel. This year, wishing to be assured respecting the qualities and origin of this fruit, M. Ligier requested the Society to delegate a committee for its examination, and Messrs. Carlier, Bravy, and Martial de Champflour were appointed to proceed to the spot to prove the merits of this novelty. A message from M. Ligier announced its maturity on the 18th of June, and the committee hastened to reply to his appeal. A lady of the Horticultural Society was desirous to join us, in order to taste and appreciate the new fruit, of which she gives a faithful portrait, finely and richly colored. At ten o'clock in the morning, some of us were beneath the cherry-tree, and others fairly among its branches. It stands in a vineyard a short distance from the elegant chateau now being built by M. Ligier.

The fruit was abundant, and, as is often the case with the Bigarreaus, their season of ripening was unequal, so that the tree bore, at once, cherries of a deep brownish purple, others red on one side only, and others again of a scarcely perceptible flesh-tint. The tree was tall, at least thirty years old, and grafted low on the stock.

"The cherries were most abundant; and some of the upper branches were bending under their weight in the most graceful manner.

"The weight of this fruit is remarkable. Some of the cherries weighed ten *grammes* (6¼ dwts.) each, and, on an average, eleven of them, weighed accurately, completed a *hectogramme* (nearly a fifth of a lb.,) which gives one hundred and eighteen cherries for a *kilogramme* (2 lbs. 3½ oz. av.,)—an enormous weight when compared with that of other known cherries.

One of the cherries measured $0^{m}.083$ (nearly four inches) of circumference in breadth, and $0^{m}.090$ of circumference in height.* When we add, that the season was not a favorable one, and that the fruit was affected by a species of blight which has appeared several times at Limague during their ripening, and therefore they had not acquired the size that a favorable year would have given them, the extreme beauty of the fruit, which we were requested to examine and test may be appreciated.

"The form is oval, slightly flattened on the sides, a little obtuse at the base, slightly irregular on the surface, concave at the point where the stalk is inserted, which is slender and of middling length.

"The skin is a fine vermillion red, mingled with carmine, glossy and brilliantly polished on the surface. The flesh is rose-colored, firm though melting, sweet (*seurée*,) and very good. The pit is small.

"The tree is very vigorous. We measured leaves, taken, indeed, from a young graft, of which the length was $0^{m}.19$ (7¾ inches,) and the width $0^{m}.11$, giant foliage, which gives the tree a foreign aspect.

"Some other trees of the same kind are growing at Mezel; they are all of the same age, and all grafted. Nevertheless, the cherry of M. Ligier appears to us entirely new, and we do not hesitate to pronounce it the most beautiful and best Bigarreau that we have yet seen. We believe it to be unknown except at Mezel, where, without doubt, it has originated accidentally. These grafts having been gathered by persons struck with the beauty of the fruit, it has thus been rescued from destruction and oblivion

"Trees of this variety will be for sale this autumn (1846,) at the horticultural establishment of Messrs. Bravy & Co., at Clermont-Ferrand. Lecoq."

* The dimensions of the fruit represented in the plate are not so great as those stated in the report.

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Superphosphate of Lime.—When a small portion of superphosphate of lime is mixed with seeds when sown, in sufficient quantity to give them the appearance of being limed over, the seeds germinate quicker and stronger, more especially in the case of old seeds; and it is also found that the plants are less liable to damp off, or be injured by insects.—*Geo. Gordon in Jour. Hort. Soc.*

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Dwarf Dahlias for Bedding.—The Dahlia is well adapted for growing dwarf, in the manner of Verbenas, and in this way makes flower beds of the most gorgeous appearance. The management required is by no means difficult, though it needs considerable attention to produce a fine effect. Those sorts only should be chosen which are naturally of a dwarf habit, and as there is an abundance of this class now in cultivation, the selection is not difficult. In planting them, they should be placed as nearly flat as possible; as fast as the shoots grow, they should be fastened down, not in the usual way with pegs only, but with small pieces of bass matting tied to a long wooden peg; the bass should be tied loosely around the shoot, allowing free room for future growth, and the peg may be gradually driven deeper into the soil as the downward growth renders it safe—without this care the shoots are apt to be broken. This applies principally to the leading shoots; the laterals being left to grow to flower upward, they will generally require thinning, as this mode of growing them increases their natural luxuriance greatly. The following sorts are well adapted to this sort of culture:—Marchioness of Ormonde (Browne's) clear white, tipped with violet-purple; Dazzle (Keyne's,) rich dark scarlet; Duchess of St. Albans (Whales,) delicate primrose, tipped with mulberry; Bermondsey Bee (Proctor's,) deep purple; Orange superb (Dod's,) dark orange; Lady Grey (Harrison's,) light lilac. There are many others equally good, but these I have tried with complete success.—*J., London Hort Mag.*

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Late Raspberries.—Mr. John Mearns thus describes his mode of obtaining a strong autumnal crop of late Raspberries:—"In May remove the young fruit-bearing shoots from the stalks or canes, leaving, in some cases, one or two eyes; in others cutting them clear off. Under either plan, they show an abundance of vigorous shoots, frequently three or four from each eye, which produce plenty of blossoms in the beginning of July; and on these a good crop of fine raspberries is borne in August,

when all the regular produce on the plants not thus treated, is consumed.

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Splendid new Aquatic Plant.—Curtis' Botanical Magazine for the present month is wholly occupied by a history of Victoria regia, the most noble of all aquatics, and of which living plants exist in the Royal Botanical Garden, at Kew. We need not say that Sir William Hooker has done justice to his subject. In addition to a sketch of the royal plant reposing on the surface of the quiet waters in which it loves to dwell, we are presented with many details of its structure, never before published. The living plants to which we have alluded, were raised from Bolivian seeds brought home by Mr. Bridges, one of the most indefatigable and successful investigators of the Natural History of South America. We must refer to this interesting monograph for full information respecting the plant, our limited space not permitting us to extract more than the following memorandum, supplied by Mr. Bridges :

"During my stay at the Indian town of Santa Anna, in the province of Moxos, Republic of Bolivia, during the months of June and July, 1845, I made daily shooting excursions in the vicinity. In one of these, I had the good fortune (whilst riding along the woody banks of the river Yacuma, one of the tributary streams of the Mamoré) to come suddenly on a beautiful pond, or rather small lake, embosomed in the forest, where, to my delight and astonishment, I discovered, for the first time, 'the Queen of Aquatics,' the Victoria regia! There were at least fifty flowers in view, and Belzoni could not have felt more rapture at his Egyptian discoveries than I did in beholding the beautiful and novel sight before me, such as it has fallen to the lot of few Englishmen to witness. Fain would I have plunged into the lake to procure specimens of the magnificent flowers and leaves; but knowing that these waters abounded in alligators, I was deterred from doing so by the advice of my guide, and my own experience of similar places.

"The Victoria grows in 4 to 6 feet of water, producing leaves and flowers, which rapidly decay, and give place to others. From each plant there are seldom more than four or five leaves on the surface, but even these, in parts of the lake where the plants were numerous, almost covered the surface of the water, one leaf touching the other. I observed a beautiful aquatic bird, (*Parra* sp.?) walk with much ease from leaf to leaf, and many of the *Muscicapidæ* find food and a resting-place on them. The plant occupies almost exclusively the water, with the exception of a few floating aquatics of small dimensions, amongst which I saw a beautiful *Utricularia*.

"The blossoms rise six and eight inches above the surface, expanding first in the evening, when they are pure white; changing finally (and by exposure to the sun) to a most beautiful pink or rose color; flowers may be seen, at the same time, partaking of every tinge between the two hues, the recently expanded being pure white and the adult rosy, almost sinking under the water to ripen its seed and produce a new race of plants when required. The largest flowers I saw, measured from ten inches to one foot in diameter.

"I had an opportunity of experiencing the fragrance of the flowers. Those I collected for preserving in spirits were unexpanded, but on the point of opening; on arriving at the Government House, in the town, I deposited them in my room, and returning after dark, I found to my surprise that all had blown and were exhaling a most delightful odor, which at first I compared to a rich Pine-apple, afterwards to a Melon, and then to the *Cherimoya;* but indeed it resembled none of these fruits, and I at length came to the decision that it was a most delicious scent, unlike every other, and peculiar to the noble flower that produced it.

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Josling's St. Albans Grape.—It is but seldom that a seedling Grape is obtained which can be recommended in preference to those varieties that have been long in cultivation; and still more rarely do seedlings possess any of that peculiarly rich flavor which characterises the Muscats of Alexandria and Frontignans. A Grape having the high qualities of those just mentioned, and not liable to shank and shrivel as every gardener is aware the Frontignans are too apt to do, must be a great acquisition; and such the seedling which forms the subject of this notice will undoubtedly prove. It was raised by Mr. Robert Josling, Seedsman, &c. St. Albans, from seed sown about six years ago; and a notice of its fruit appeared in the *Gardener's Chronicle*, 1845, page 660, as being excellent, rich and sugary, with a Frontignan flavor; and that the variety was deserving of extensive circulation. This year fruit of it was exhibited at the meeting of the Society in Regent-street, September 1st, for which a certificate of merit was awarded. The bunch, supported by a strong footstalk, is very long and tapering, with strong diverging shoulders. The berries are about the size of those of the White Frontignan, round, greenish-white, acquiring a tinge of golden-yellow when well ripened. Flesh rather firmer than that of the Frontignan grapes, but not so firm as that of the Muscat of Alexandria, very rich and sugary, with a Frontignan flavor. The leaves, in their general outline, are tolerably round, their lobes not deep, but the serratures are tolerably sharp; both the upper and under surfaces are remarkably glabrous, and slighly tinged with red. On the whole, the leaves bear considerable resemblance to those of the White Muscat of Alexandria; the berries, however, differ in being decidedly round, like those of the Frontignans; but the leaves of the latter are not glabrous, being furnished with bristly hairs at and near the axils of the veins beneath. It is perfectly distinct from any other variety known. The following has been received from Mr. Josling in reply to inquiries respecting this excellent Grape:—"About six years ago I sowed some seeds of Grapes disfigured by wasps, of the White Muscat, White Hamburgh, or Large White Nice, White Muscadine, and White Sweet-water; the Frontignan I did not grow at the time. These were gathered and sown promiscuously, so that I can not say positively from which of these sorts the variety in question has originated. My opinion is,

that it is between the White Nice and the Muscat; these grew side by side. In the following autumn, after the seedlings came up, two were planted by the side of each vine already growing; and the shoots trained up the rafters inside. Most of these have fruited, but proving worthless have since been cut away. I reserved three, besides the one which is the subject of this communication, but they are much inferior to it. For this I made space by cutting away the original vine, a Black Hamburgh, by the side of which it was planted. It differs most distinctly from the White Frontignan, from the time of showing fruit, until, and when, ripe. In showing its fruit the branches are very long, on amazingly stout footstalks, which strut diagonally from the vine in a manner very different from any I grow. At this stage they are very conspicuous throughout the house. After this the berries assume a dark-green color; the Frontignan is of a pale green; it shoulders, the Frontignan does not; the bunch tapers to a point, the Frontignan is more cylindrical; the footstalk throughout the bunch is very stiff, the Frontignan hangs loosely. In flavor it approaches the Frontignan more than any other grape; but even in this respect, it differs materially, the berry in the mouth having more substance, and being more sugary and sweetmeat like; when ripe it assumes a dark-gold color. The berries have their pedicles well extended, so that much thinning is not required. With regard to the foliage, on first breaking, it has not that white mealy appearance which the Frontignans have; it more resembles the Black Hamburgh in all its habits of growth. In ripening, this variety is rather later than the Frontignan, and has not shanked with me, nor shrivelled in the berry, as does the Frontignan. I have grown 30 rafters of Grapes in three houses, of the leading kinds, within the last sixteen years, and I can assert that it is decidedly distinct from any that I grow. Its habit of growth is strong and robust; and altogether I consider it a valuable variety." In this opinion I concur.—*Thompson, in Journal of the Hort. Soc.*

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PRIZE FOR A BLUE DAHLIA—The Horticultural Society of Edinburgh has offered a prize of £1000 for that supposed impossibily, a *blue* flowered Dahlia: and the Horticultural Society of Dublin, has since offered double that sum, £2000.

We have always been numbered among the most zealous promoters of the progress of horticulture. But we stop here, to express the feeling which the perusal of this programme awakens. To propose a prize of fifty thousand francs for a Dahlia, in *Ireland;* in that unhappy country where famine has become a national disease, an endemic malady—it is an insult to public misery *!—Revue Hort.*

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IMPROVEMENT OF THE PERSIMMON.—We observe in the *Bon Jardinier,* that two intelligent French horticulturists, Messrs. REGNIER and AUDIBERT, have been raising seedlings of our native Persimmon, (*Diospyrus viginiana,*) in the hope of producing finally an excellent edible fruit.

Their efforts have already been attended with the most promising results. M. AUDIBERT has produced a seedling with large round fruit, double the size of the original species, the flavor of which, "recalls that of a mirabelle plum."

M. BEYNIER'S best seedling, he has named *Plaqueminier Pierquin,* Pierquin's Persimmon, in honor of one of his friends. The fruit is as large as a hen's egg, oval acuminate, of a golden yellow color, and an agreeable flavor.

These gentlemen intend continuing their experiments with successive generations of Persimmons, raised from these new varieties, and there is every reason to believe that they will be rewarded at last by a variety which will prove an admirable addition to the dessert.

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HARES AND RABBITS.—We have been much troubled with them for years, and have tried tar, oil, soot, lime, string tarred and oiled, but all to no purpose. In the summer of 1843, we had a fine plantation of Sturmer Pippins spoiled in one night, as well as other young apple trees. So very destructive are these creatures, that we determined upon having every plant of crab and apple removed into another garden; but one of our men observing that he had seen *brimstone* tried, and that it had the desired effect, we immediately set to work and made a quantity of large matches, like those used for suffocating bees, and stuck them about the ground, (the matches were not lighted;) and since using them thus, not a leaf has been touched. As to Rabbits not eating Rhododendron, we have proof to the contrary; for on a piece of land where we have not used matches, the Rhododendrons are bitten off as clean, as if the pruning shears had been at work on them. In very severe weather, Rabbits have been known to attack, and bark the stems of standard Roses. We melted the sulphur in an iron pot, and when hot dipped the matches, which were made by winding tow, rags, or anything we could lay hold of, round sticks and firmly binding it on.—S. & J. D. *Sturmere. Gard. Chron.*

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WOOD FOR COFFINS.—This a grave subject, and has enlisted the attention of an English paper, which says married people should be buried in pear tree coffins, chronologists in date tree, bricklayers and plasterers in lime tree, pugilists in box wood, schoolmasters in birch, old bachelors in elder tree, cowards in trembling aspen, the honest tar in sturdy oak. The list may be extended by adding: Misers in chest-nut, inconsolate maidens in pine, democrats in hickory, whigs in ash, politicians in slippery elm, authors in pop(u)lar, millionaires in plum, old soakers in cherry, pretty women in sugar maple, handsome folks in dogwood, clam-catchers in beech, soldiers in lancewood and hard-hack, dairy-maids in butter-nut, dandies in spruce, fishermen in bass-wood, poets in laurel, horse-jockies in horse-chestnut, hatters in fir, shoemakers in their own tree, blacksmiths in iron-wood, book-binders in boards, lovers in the tulip tree and sigh-press, coquettes in witch-hazel, travelers in sandal-wood, gardeners in rose-wood, landscape painters in birds-eye maple, carpenters in plane-tree, misanthropes in crab-apple, odd-fellows in the palm tree.

The following may also be considered very ap-

propriate plants for decorating the graves of different craftsmen, professional men, &c. Watch makers the "four o'clock" and thyme, sextons of churches canterbury-bell, surgeons boneset, astronomers night-shade, upholsterers fringe-tree, dry-goodsmen calico plant, fortune hunters marygold, spendthrifts, the billberry, scribblers the calamus or jonquille, cooks the pansy or buttercup.

DOMESTIC NOTICES.

PLANTING IN CEMETERIES.—A friend in New-York, desires some hints on "the best mode of enclosing cemetery lots." We have already expressed our strong disapprobation of most of the iron railings now so much in fashion for this purpose—both as being tasteless in themselves, and associated with the *areas* and *front door steps* of cities, and as destroying the feeling of repose and rural beauty which should pervade a cemetery.

Where these railings already exist and cannot well be removed, we would obviate the objection to them by wreathing them about with some hardy and beautiful vines, or twining shrubs. The most desirable for this purpose, that occur to us at the moment are the following: Chinese twining honeysuckle, (*Lonicera flexuosa,*) with fine, dark, subevergreen foliage and fragrant flowers; Chinese Wistaria, (*W. sinensis,*) a luxuriant vine, with long clusters of pale lilac blossoms; and the Periploca or Virginian silk, (*Periploca græca,*) with rich green leaves and curious brownish flowers. One plant of these would soon make a rich drapery over a piece of iron railing 8 or 10 feet long. A plant or two of the Sweet-scented clematis (*Clematis flammula*) might be mingled with the foregoing in planting. Its small foliage would be of no value in covering the iron work, but its delicate showers of pale star-like blossoms would have a most pleasing effect in summer, when in bloom, to say nothing of its delicious perfume.

For an *evergreen hedge*, as an enclosure to a cemetery lot, and we consider it the most appropriate—we think there is nothing on the whole like the *Arbor Vitæ*. This plant, as it grows on the Hudson, is almost a fac-simile, in its tapering conical outline and general effect, of the *Evergreen Cypress* of the South of Europe—so long a favorite in cemeteries abroad. Its color is a rather more cheerful hue of green, and therefore more agreeable in our eyes. Planted and treated as a hedge, it may, by shearing it annually, (and no plant bears shearing better,) be kept down to the height of three feet. Or if it is left to grow untrimmed it will at last form a thick screen or enclosure, say 15 feet high. The latter we must confess suits our feeling of the seclusion and privacy which should shield the last place of repose of a private individual, far better than the open garish display of iron fence and sculptured stone which catches the eye of the multitude.

A very neat and pretty hedge for a cemetery lot, growing about three or four feet high, and requiring very little care, may be formed by planting the well known Double White Scotch Rose (*Double Burnet*, of some.) Its foliage and thick, compact habit of growth, render it pretty through the whole season, and in May it is thickly studded with its delicate little white roses. *Privet* very speedily makes a thick hedge of foliage, and is very well adapted for this purpose, and that pleasing evergreen shrub, lately introduced into our gardens, and which we notice is already quite common in the Philadelphia nurseries—the *Japan Euonymus, (variegated leaved)* will make an excellent low hedge or border for enclosures of this kind.

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PRUNING THE PEACH TREE.—This is the season in the Northern States, for "*shortening-in*" the young wood of bearing peach trees, as recommended in our work on *Fruits*, page 259.

We are glad to perceive that the merits of this mode of pruning the peach, are beginning to be very generally appreciated among our cultivators. We consider it the most important point in peach culture, and cannot too often, or too strongly, impress its value upon our readers.

Last summer, we were shown, by a market gardener, a row of fine, thrifty standard peach trees, 5 years planted. There were eight trees in the row. Two of them had been regularly *shortened in*, in the month of April, over the whole surface of the last year's growth, cutting back just half the young wood. The other six were allowed to remain without any pruning.

The two trees that had been shortened-in, bore a good crop of very large and handsome fruit, which readily sold for two and a half dollars per bushel in New-York market. The *shortening-in* had of course taken away half the blossom buds at once, and given the whole vigor of the tree to the remainder.

The other six trees were overloaded with fruit to such a degree that many of the branches were broken with its weight, which caused the gum to ooze out, and will probably lead to the premature decay of the trees. The fruit being so very abundant was of course under medium size, and neither high flavored, nor handsome in appearance. It was sold for one dollar per bushel. Need we add anything more to those who desire to raise the finest or the most saleable fruit.

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NOTES FROM PHILADELPHIA.—The general business of horticulture may be said never to have been more prosperous here than it now is. There has been a demand this winter for more bouquets than could be supplied; a more enduring evidence, however, may be found in the fact that our *great staple* of green-houses, the Camellia, retains its place and price, notwithstanding the immense number that are annually propagated. In the language of the

money-market, Camellias "are in request, and prices have rather an upward tendency." One of our principal cultivators potted *four thousand plants* last season, and this spring will perform the same operation to *six thousand* more. A new market is just opening in the great West, where taste is surely making its way. A good Camellia *plantation* is a good investment.

This beautiful flower has probably not yet been seen in its greatest perfection among us. If some enterprising man of taste would erect a *Conservatory*, in such a manner that it could be removed in summer, and plant Camellias *in the ground*, where their roots would have a fair chance to extend themselves thoroughly in good deep soil, we might soon see Camellias twenty and thirty feet high, with flowers probably greatly enlarged. Will not some of our amateurs try it? As a speculation, it would answer well; very little heat would be required, and the plants would grow rapidly.

Among the very extraordinary and beautiful plants of this neighborhood, little known elsewhere, is the *Nelumbium luteum*, an aquatic plant, that has taken root and flourishes admirably in Hollanders' Creek, a mile or two below Philadelphia. Both leaves and flowers are superb. The Messrs. LANDRETH formerly succeeded in growing it very successfully in a pond in their garden. The roots were obtained in July, and tied up in earth with some straw, the stalk and leaves being then in perfection. The bundle was thrown into the rain-water pond, and here it flourished perfectly, some of the leaves measuring two feet across. It appears to me this elegant foreigner might be successful in every gentleman's park with proper care; and sure I am no such elegant aquatic has yet been introduced. It is supposed to have originated from some seed dropped from a ship that wintered in the creek a "long time ago." J. J. S. *Philadelphia, March*, 1847.

REMARKS.—This superb Lotus, or Water Lilly, referred to by our correspondent, is a *native* of this country, and a not unusual inhabitant of the lakes in the Southern, though very rare in the Northern or Eastern States. Its immense flowers and leaves, more than treble the size of those of the common water lilies, render it a very striking object. It grows wild in Big Sodus Bay, Lake Ontario. NUTTALL, in the *Transactions of the American Philosophical Society*, says its large "tubers resemble those of the sweet potato, and when boiled are, as farinaceous and agreeable as the potatoe, and are employed for food by the Osage and other Western Indians."—ED.

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NOTES ON FINE PEARS.—The pear being a fruit remarkably liable to vary in quality from external causes, notices of those best adapted to various localities can hardly fail to be useful. The remarks of CHEEVER NEWHALL, in the last No. of the Horticulturist, are of this character. Perhaps a notice of some celebrated varieties, as produced in western New-York, may not be unacceptable.

The *Bloodgood* proves to be a decidedly first-rate pear; no one preceding, or ripening with it, proving its equal in all respects.

Dearborn's Seedling is one of the best—nearly equal to the Bloodgood, but smaller in size.

The *Skinless* is one of the freest growers of all pears, is abundantly productive, and always bears fair and uniformly good fruit, though not decidedly rich and high-flavored. It ripens before the Bloodgood, and, all points considered, is one of the most desirable early pears, especially on clayey soils.

The *Andrews* is a fine pear—a great bearer while the tree is yet young—and the fruit fair and handsome. But it proves only second-rate in richness, and drops early from the tree, often before the fruit is fully grown, and usually before it is sufficiently matured to ripen perfectly within doors.

The *Urbaniste* is an excellent pear, but too acid [? ED.] for many palates, and is a very moderate bearer.

The same objection occurs here to the *Passe Colmar* and *Easter Beurre* as at Dorchester, the fruit very rarely attaining perfection under ordinary management.

The *Columbia* bears very fine crops of large fair fruit, but drops too early from the tree.

The *Flemish Beauty* is a large, fair, and productive variety, and, though not of first-rate flavor, proves worthy of cultivation.

The *Jargonelle* is a fine early pear, rather coarse, but quite rich in flavor, and needs, indispensably, house-ripening, not only to perfect its flavor, but to prevent the inevitable rotting at the core when left too long on the tree. The utility of house-ripening cannot be too frequently and strongly urged for most varieties.

Bezi de la Motte, once in five or six years, proves delicious; at other times it is tasteless and of no value. [Almost uniformly good here.—ED.]

The *Madeleine, Seckel, Bartlett, Virgalieu, Gray Doyenné*, and *Winter Nelis*, maintain the high character given them elsewhere; and were I compelled to choose but one variety, as best, for its agreeable and delicious flavor, I should perhaps select the *Gray Doyenné*. J. J. THOMAS. *Macedon*, 3*mo*. 8, 1847.

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THE MERITS OF FLOWERING PLANTS.—It is by no means an uninteresting or useless occupation, to inquire into the nature and causes of the pleasure or indifference universally felt by all persons, when witnessing different kinds of plants in a flowering state. By so doing, the mind is led at once to discard all those vague and ambiguous notions which are frequently induced by extrinsic circumstances or personal infirmities, and to establish definitive rules for our future guidance and regulation. What is termed *taste*, is, we know, exceedingly varied and capricious; but there are, even in this, certain essential principles, which may be easily reduced to some degree of order, and rendered generally available.

The very first thing which attracts the attention of the observer of a flowering plant, is its blossoms. If these are very numerous, conspicuous, and of brilliant color, all other characters are for the most part forgotten, and it is pronounced valuable. But, when the flowers have faded, it is frequently discovered that the plant is both meagre and unsightly, and so continues throughout the remainder of the year. Here, then, we have a case in which it is evident, that a judgment formed upon the merits of

a plant by its flowers alone is altogether unsatisfactory and improper. Instances of a contrary nature might be adduced to show, that where the flowers are small and inelegant, the whole appearance of the plant may still be ornamental, and so remain perpetually. Again, if the foliage be taken as a criterion in the absence of flowers, conclusions equally erroneous may be readily deduced.

To determine with any degree of accuracy the general character of a plant, every feature must be strictly scrutinized. A really beautiful object of any description, is one in which *all* the parts are in some measure conformable to each other; and this is precisely the case with plants. Symmetry and harmony of outline, though essential, are quite insufficient to constitute beauty, unless every component part contribute distinctly and individually to create that harmony. A large, coarse, and uncomely flower, surmounting a slender and leafless stem, is certainly far from being a graceful object. In the same manner, an insignificant blossom, buried beneath a dense mass of noble foliage, excites feelings completely the opposite of admiration. Utility is not a constituent of beauty in plants;—therefore, in viewing them, it must be wholly excluded, as a quality, from our considerations.

Next to the general conformity of the different members of a plant, and the adaptation in the size and contour of their particular organs, their surface and color may be examined. These apply principally to the foliage and flowers. Leaves are technically termed *coarse*, when they are large, with great and numerous inequalities on their surface, and covered with hairs, bristles, or aculei. None of these characteristics, however, are independent criteria; and size, especially, is frequently associated with real beauty, when no other detractive quality accompanies it. Unitedly, the preceding defects constitute the coarseness mentioned above; while precisely the contrary properties are necessary to true elegance or handsomeness. In point of color, whether it be light, deep, or any intermediate shade, the tints should be lively and clear; and this is particularly desirable when the plants are what is termed evergreen.

As the appearance of flowers is considerably deteriorated by association with insignificant or slovenly foliage, so, in a much greater degree, fine foliage alone can never compensate for the want or inferiority of blossoms. Flowers are and must be regarded as the greatest ornaments of a plant, however fugitive they may be. It is important that they stand out boldly and advantageously to view, that their form be symmetrical (or as near it as possible in each case,) but chiefly that their colors be distinct, bright, and agreeable.

In a large proportion of instances, the observer of a plant is determined in his opinions by the color of its flowers. But this, when viewed apart from other considerations, is the result of an erroneous and puerile taste. Hence so many shabby-looking, and really uninteresting plants, acquire a degree of notoriety purely artificial, and which invariably subsides when the novelty of its object has ceased. By this means, also, persons of correct taste wholly disregard popular declarations; and many highly valuable plants are thus retained in that state of obscurity which is alone merited by their injudicious and incompetent appraisers.

The preference for certain colors is a question to be decided by individual taste, although some are almost universally voted vulgar; but the characters herein depicted are essential to real beauty. If the persons who cultivate plants for sale, and those who in any way describe them, would bear these principles continually in mind, their opinion would be regarded with much greater deference and confidence, and the diffusion of floricultural taste and practice would be wonderfully facilitated. Nor could it be otherwise than useful to the general cultivator, particularly to those who are frequently called upon to decide the merits of plants at horticultural exhibitions; as they would thus acquire that stability and assurance of judgment which would insure a cheerful and ready acquiescence in their award.

We trust this article, though brief, will be found of some value to the reader. Though not original, its language is yet so entirely in accordance with our opinions, that we have not thought it expedient to do more than change the phraseology in a few particulars. It is enough to say, that the views expressed are those of Mr. Paxton, whose "Magazine of Botany," now numbering twelve volumes, may justly be regarded as one of the most elegant works of the kind it has ever been our good fortune to see, not merely for the splendor of its numerous plates, but, also, for the vast amount of information it contains on every subject appertaining to the literature of gardening. Believing that to nine-tenths of American readers its excellencies are entirely valueless, because unknown, we purpose using it freely in our communications, and have full confidence in our belief that a benefit will thus be conferred upon horticulture and its rapidly increasing patrons. Wm. W. Valk, M.D. *Flushing, L. I.*

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Early Peas and Cheap Hot-Bed Lights.—I practice a cheap way of raising early peas, which may be worth making known to some of your readers.

This is nothing more or less than starting them under cover, about three weeks earlier than it is possible to do out of doors. I do this by taking any cheap rough boards, six or eight inches wide, and nailing end-pieces to them, so as to form a common *trough*, (fig. 108.) This trough I fill with good rich garden

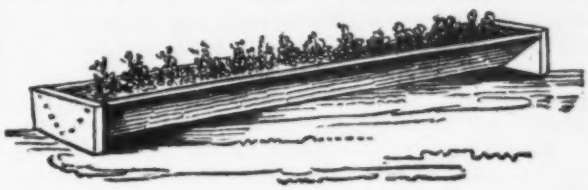

Fig. 109.

soil, and sow it with a *row of peas*. The troughs may be placed in a green-house in any convenient place, or in a temporary hot-bed frame. I make my troughs or boxes eight feet long for the sake of convenience, and I start them in frames made in a method equally cheap.

This cheapness consists in using stout *cotton stuff*

stretched on frames, *instead of glass*, for the lights. It makes lights quite as good as glass for most forcing purposes, and costs not a fifth as much. After the cotton is stretched on the frames I make it transparent and durable by giving it a coat of the following composition: *three pints best old boiled linseed oil, four ounces white resin*, and *one ounce sugar of lead*. The oil and resin must be a little heated to make them mix, and the sugar of lead must be first ground with a little of the oil, and then mixed with the remainder. I usually brush a coat of this over my canvas lights every season before using them.

I place my troughs of peas in rough board frames, covered with these canvas lights, about from the middle of February to the middle of March, which is about three weeks before they will come up out of doors here. Some of those sown earliest, I give a little hot-bed start to, by placing about two feet of stable manure at the bottom before putting down the frames. On this I place my troughs, and this gives them a good start in the commencement. I do not take the trouble to renew any linings of litter.

But for my main crop of early peas, which I start about the 1st of March, I use nothing but the frame and the canvas lights, which cover it. This gives warmth and shelter enough for peas; for my crop in the troughs is growing every day with little or no attention, while in the open ground they have scarcely vegetated.

As soon as the weather becomes mild and fine—say, by the 1st of April—I prepare a spot in the kitchen garden, in which to *transplant* my early peas. This is very easily done by making a slight trench, just large enough to take in the whole trough—fill the earth up to the sides of the box, knock away the ends, and then, carefully drawing out the sides, press the mellow soil up to the earth in the trough, as the sides are drawn away. By watering the earth in the troughs beforehand, and doing the work nicely, the peas "will never know they have been transplanted." Now stick them and earth them up, and you will be able to gather an excellent crop of early peas at least two weeks before the most industrious of your neighbors who have trusted to the open air only, and three weeks earlier if the weather is mild, and you have started your troughs early with some manure in the hot-bed. KITCHEN GARDENER.

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THE BEST EARLY PEA.—Pray which is the best early pea, taking earliness, excellence of flavor, and productiveness into the account? I find many new names in the seed-shops, and am in doubt if any of them are better than the old *Early Frame*. A QUERIST. *New-York, March*, 1847.

ANSWER.—*Prince Albert* is the very best early pea we have ever cultivated. It is a week earlier than the best old varieties; excellent, and yields good crops.—ED.

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PRUNING APPLE-TREES.—The experience of C. SPRINGER, of Ohio, in cultivating apples without pruning the trees, (see last No.,) affords an interesting instance of success; and I should have been pleased had he urged another point, as a main cause of the great superiority of his fruit, besides the omission of pruning. The ground, it appears, was manured annually for several years; and the great fertility thus induced was kept up by using the orchard as a hog-yard. This treatment, applied to a naturally fine soil, made it too rich for the Rhode-Island Greening; and would, perhaps, have been a sufficient explanation of his extraordinary success with trees only sixteen years old, without taking pruning at all into consideration.

Had his orchard not received this excellent management, and the trees stood till fifty years old, he would probably have found that a moderate and judicious thinning would have afforded better fruit, than to have permitted a dense mass of crooked and stunted branches. His experiment, however, proves most conclusively the superior importance of a fertile soil at the roots of the trees, to the attempt at a complete substitute by lopping the limbs; and these suggestions are merely made to direct attention to this point, while the disgraceful mutilation, so frequently practiced under the name of pruning, cannot be too strongly discouraged. J. J. T. *Macedon, 3mo.* 8, 1847.

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APPLES FROM ROCHESTER.—Dear Sir: As the subject of *Fruit* is now receiving something like due consideration, and as you hold a high place in the minds of those who cultivate it, your opinion, when fully expressed (with specimens before you,) will give a character to a variety which I am inclined to believe will find a response in the opinions of all persons.

I herewith send you, by express, specimens of varieties which have been (in part) kindly contributed by gentlemen of our city and county.

You will find the *Northern Spy, Baldwin, Red Canada, Newtown Pippin, Lacquier*, and *Yellow Bell-Flower*. In this region they are generally prized as amongst the very best apples ever produced. One object I have in sending the fruit is, to have you test the difference between the Northern Spy and the Canada Red. As with other things, both apples have their warm friends; and discussions are going on touching the Northern Spy, as regards its merit as a fruit, and of the tree as a *productive or non-productive one*.

You have already published a statement respecting its origin; but the simple mention of the fact, that the seeds were brought from Connecticut some forty years since, and planted in Bloomfield, in our state, may not be uninteresting.

I inclose you the certificate of Mr. HAND, of Mendon, who has raised the Spy in the greatest perfection known in this region. In addition, he has verbally communicated the following facts: That from *twenty-four* young trees he raised eighty barrels of apples in the year 1846, sixty-five of which he brought and sold me at two dollars per barrel, and the fifteen he kept being good, but not such as I now send you.

Mr. HAND probably takes more care of his trees than any other cultivator in this region; and the specimen of *Swaars* marked with his name, I wish you to compare with the others in the box. Pruning is important with the Northern Spy, as the effect of the sun is to give them their beautiful coloring, and, many times, pine-apple flavor.

Another important characteristic is, that the trees of this kind put forth later than other trees, thus escaping late frosts; and as they are the last to ripen, they keep, as you have been before told, into June and July.

Several gentlemen are interested in having you receive the samples. Although we have not succeeded, thus far, in producing as many of the Baldwin and Newtown Pippins as our eastern friends, we prize them very much.

The Red Canada sent, are grown from young as well as old trees, which you will discover in the difference of size. The samples are as fine as were ever seen here, and the friends of that apple in preference to the Spy shall have all the benefit of it. I procured the larger samples of this sort from Mr. WAKELEE, and the smaller ones from Mr. UPTON, on the Ridge Road. The specimens of *Yellow Bellefleur*, and a part of the Swaars, were raised by Mr. P. MAJOR, of this city.

We shall be glad to have you notice the apples in your valuable paper, and hope they may reach you in safety. With respect, your friend, JAMES H. WATTS *Rochester, Feb.* 10, 1847.

REMARKS.—Rochester is becoming famous for her fine apples, and the specimens obligingly sent us by Mr. WATTS would in no way detract from her Pomonal celebrity. They were truly admirable in size, beauty of appearance, and flavor.

The specimens of *Northern Spy* and *Canada Red* were the finest we have yet seen of these varieties. The Northern Spy needs no commendation of ours; it is undoubtedly one of the finest long-keeping winter apples known; remarkable for its freshness, juiciness, and delicious flavor.

The Canada Red, which we learn is supposed to have originated near Toronto, is a comparatively new apple to us; and if we judge solely by the fine samples sent us by Mr. WATTS, we cannot hesitate to rank it among the *very best* winter apples. By those who like the rich, brisk, sub-acid flavor of that grand old variety, the Esopus Spitzenbergh, it would be preferred to the Northern Spy, as it approaches more strongly the Spitzenbergh flavor. Both are remarkably fine fruits, and must soon come into very general cultivation. We shall give a figure and description of this fruit in our *Supplement to Fruits and Fruit Trees.*

The *Swaars* were fine specimens. Those carefully grown by Mr. Hand were finely formed, with a blush on the sunny side of each—highly aromatic, or *fennel-flavored.* We rank a fine Swaar, among apples, with the *Seckel* among pears; but it does not thrive except in deep mellow soils.

The specimens of Baldwin, Yellow Bell-Flower, and *Yellow* Newtown Pippins, were of average size and good flavor. The "*Lacquier*" resembles a little the *Domine* and *Rambo.*

We annex the following letter of the very successful grower of the Northern Spy:—ED.

I have grown the Northern Spy apple from fifteen to twenty years. I have, on the whole, found it a good bearer—fruit extremely fair-looking—size good; and with me it yields a better crop than the *Swaar.* I have kept a few in fine order until the 4th of July. The general crop I can keep till the last of May or 1st of June. The quality I consider superior to any other apple. I have sold my crops in Rochester, and they have averaged at least one dollar a bushel for ten years last past; and I can sell this more readily than any other apple.

I find the trees put forth their leaves from ten days to a fortnight later than any other apple, and on that account are more secure from late spring frosts. They are fine smooth-barked, and thrifty growing trees, making, in the orchard, a finer-looking tree than any other in my vicinity, (Mendon.) RICHARD I. HAND. *Sept.* 12.

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SELECT LISTS OF FRUITS.—The Fruit Committee of the Genesee Valley Horticultural Society, having been requested to furnish small select lists of fruits, have published the following:

The Committee in presenting the following list wish to state that they have confined themselves wholly to such varieties as have been satisfactorily proved in this section.

So great is the diversity of taste in regard to the merits of fruits, and so numerous the excellent varieties from which to choose, that the Committee have experienced some difficulty in adopting a list even as extended as this.

There are no doubt many other varieties as good, and, in the opinion of some, perhaps better than some of these; but the Committee are unanimously agreed, that the excellence of this selection is beyond a doubt, and that the whole or a part, as circumstances require, may be cultivated with entire confidence. The names are placed in the order of ripening.

APPLES.

Summer Apples—July to September.—Early Harvest, Early Strawberry, Red Astracan, Sweet Bough, Golden Sweet.

Fall Apples—September to December.—Early Joe, Porter, St. Lawrence, Jersey Sweet, Gravenstein, Fall Jenneting.

Winter Apples—December to June.—Holland Pippin, Twenty Ounce, Fameuse, Red Canada, Peck's Pleasant, Yellow Bellflower, Swaar, Talman Sweet, Rhode Island Greening, Esopus Spitzenberg, Baldwin, Green Sweeting, Northern Spy, Roxbury Russet, Yellow Newtown Pippin.

PEARS.

Summer Pears—July to September.—Madeleine, Bloodgood, Osband's Summer, or *Summer Vergalieu*, Belle of Brussels, or *Belle of August*, Dearborn's Seedling, Bartlett.

Fall Pears—September to November.—Stevens' Genesee, White Doyenne or Vergalieu, Seckel, Onondaga or Swan's Orange, Gray Doyenne, Brown Beurre, Beurre Diel, Duchesse d'Angouleme.

Winter Pears—November to March.—Beurre d'Aremberg, Prince's St. Germain, Winter Nelis, Passe Colmar, Winter Bell or Pound.

CHERRIES.

Early Purple, Bigarreau d'Mai, May Duke, Elton, Black Tartarian, Black Eagle, Belle de Choisy, Yellow Spanish, Napoleon Bigarreau, Downer's Late, Large English Morello.

PLUMS.

Green Gage, Imperial Gage, Duane's Purple,

Huling's Superb, Smith's Orleans, Washington, Coe's Golden Drop, Winter Damson.

P. Barry,
S. Miller,
A. Sawyer,
J. W. Bissell,
S. Moulson,
} Committee.

Rochester, Jan. 14, 1847.

[The selection contains many fine fruits. "Holland Pippin" we perceive (perhaps by an error of the printer's) is placed among *winter* apples. It is properly an autumn apple in this country, though a winter fruit in England. It is a very valuable *cooking* fruit—often confounded in this country with the *Fall Pippin*, a fine dessert variety, (keeps till midwinter at the north,)—which it resembles in growth and external appearance only. The *Early Joe* apple is a new variety, chiefly known about Rochester, and a most excellent fruit of very sprightly, agreeable flavor. We have large bearing trees of both these sorts. We would substitute *Flesh colored Bigarreau* for *Napoleon*, and *Columbia Plum* for *Duane's Purple*. But the Committee proceed on a sound principle in recommending only such as have been well tested in their district of the State.—Ed.

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The "Cooper" Apple.—We noticed in our January No. the fine specimens of an apple under this name, sent us by Rev. C. Springer, of Ohio. As this fruit has a considerable reputation in Ohio, it was supposed by some who cultivated it there, to be a native fruit.

Mr. Springer has, however, since traced this fruit to the orchard of Mr. Wm. R. Putnam, of Marietta, O. Mr. Putnam is a gentleman of high standing, and a member of the State Board of Agriculture. In reply to Mr. Springer's inquiry about the "Cooper" apple, he addressed Mr. S. the following letter:—

Marietta, Feb. 1, 1847.

Dear Sir—Your note of the 29th ultimo came safely to hand. In answer, I will observe that in the year 1795, I received from Mr. Israel Putnam, of Connecticut, a quantity of scions of apple trees which I engrafted; among which were (according to the catalogue preserved) the "Cooper" Apple, the Putnam Russet, and a great variety of others. Whether the Putnam Russet is the same as the Roxbury, I know not. All the Putnam R. in this vicinity, sprung from those sent here by Mr. Putnam, as aforesaid, and the Cooper apple also.

I remain, dear sir, your obedient servant,
Wm. R. Putnam.

Rev. C Springer, *Meadow Farm, O.*

T. H. Humrickhouse, Esq., of Coshocton, Ohio, a well known amateur, has suggested for our consideration that the Cooper may be synonymous with the "Fall Harvey" of New-England. But we think not, as the Cooper has a short stock and is higher flavored. Mr. H. further says, "I consider the *Cooper* an autumn fruit, though I have kept it till winter.

We presume this apple will prove synonymous with a fruit now known and cultivated about Hartford, as the *Belle et Bonne* ("*bella-bound*" of some farmers there.) We find the two fruits agree as nearly as possible, judging from our remembrance and careful memoranda of each. Specimens that we have seen of both these apples, were remarkable for the *smallness of the core;* in form, size, color and beauty of the fruit they agree. What the true name of the Hartford apple is, if it is a described variety, we cannot say, but the coming season will probably enable us to decide.

We ought to make a remark here, relating to the many new varieties of fruit claimed to have originated in the Western States. During the last year, it has been pretty satisfactorily ascertained that several of the leading western sorts, are old and well known eastern varieties—for example—"Putnam Russet," is Roxbury Russet—"Marietta Seek-no-further," is Westfield Seek-no-further—the "Little Pearmain," is probably the American Golden Russet—the "Detroit" of Cincinnati, is an old Belle Fleur—the "Newtown Spitzenberg" of the same place is the Vandervere, &c. The utmost confusion and uncertainty prevails in the west, touching the names of fruits, and we must look to the Cincinnati Horticultural Society, and to intelligent cultivators west of the Alleghanies, gradually to rectify all this medley of unchristened fruits. Nothing is so destructive to pomological accuracy, as this prevalence of half a dozen names for the same fruit. As soon as the standard name is really ascertained, let all local synonyms be dropped. The possession of a good experimental orchard by the Cincinnati Society would greatly expedite this matter—and in the absence of that, a complete set of wax-models or fac similes of fruits, such as were shown at the Fair of the American Institute last autumn, would be a valuable assistance.

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Strawberries.—I care little for a great variety of this fruit, but I would much like to know what *provers* of the strawberry, think are the *two best sorts* for family use—one early, and one at the middle season—the latter for a full crop. I am yours, &c. *J. McC. Baltimore, March* 2, 1847.

[We would recommend, if confined to two sorts only, *Large Early Scarlet*, the best of all early sorts, for the first; and either *Hovey's Seedling*, or *Black Prince*, for the second. The two latter are both large fruits, productive and excellent. *Hovey's Seedling* has a mild sub-acid flavor, and is perhaps best adapted to light soils. *Black Prince* is a richer flavored berry, and likes a strong soil.

The *Large Early Scarlet* is a perfect "blossomed" sort, and always sets its fruit well. The other two are *pistilate* and must, to give large crops, be planted with a proportion of one in 10 or 15 plants of some *staminate* sort, as the *Early Virginia*.—Ed.]

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Scarce Plants.—We notice in an English gardening journal, that *Rene Langlier*, nursery man St. Helier, Isle of Jersey, advertises his Pear, "Langlier's Buerre," at 3*s.* 6*d.* sterling, (about 75 cents) each, and the *Grosse Calabash*, a "perfectly melting fruit, measuring from eight to eight and a half inches, weighing from twenty to twenty four ounces, and ripening in November;" price 5*s.* (about $1.20) each.

In the *Gardener's Chronicle*, London, Mr. Warren, the Boston nurseryman, now in England, ad-

vertises for subscriptions to the two new Camellias, *Wilderii* and *Mrs. A. Wilder*, of which he now holds the stock, at *ten guineas* the pair, deliverable in the autumn of 1847.

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To fix Shifting Sand-Banks.—Dear Sir: In your excellent work, "The Horticulturist," from which I have already learned very much, I find an inquiry how to fix shifting sand-banks? and as I, in my native country, often was engaged in that business, I hope you will not think it improper for me to write a few words about it.

In Sweden, Denmark, and Holland, there were formerly, more than now, shifting sand, or, as it there is called "fighing" sand, in great extent; and a part of the western sea-shore of Denmark, say about 150 miles in length, was nothing but such sand, often destroying whole villages. However, several plants, as *Elymus arenarius* (upright sea-grass,) *Arundo epigeios* (wood reed,) *Carex arenaria* (sand-sedge,) coarse kinds of grasses, and even *Juncus conglomeratus* (common rush,) may be used for fixing it, or making it solid. Nothing, however, is equal to that species of reed called *Arundo arenaria*, that the wise Providence evidently created just for this purpose. It only grows and thrives in "fighing" sand; and it sends its strong and spreading roots out, more than fifty feet in length, at each joint making a young plant, and dies gradually off, when the sand is fixed, giving place for grasses, particularly *Agrostis capillaris*, *Aira canescens*, *Festuca duriuscula*, *Nardus stricta*, and sometimes *Festuca ovina*, until it by and by gets intermixed with *Erica vulgaris* and *tetralix* (common heath,) making at last, of what was once a driving sand-field, a tolerable good pasture for sheep.

The propagation of *Arundo arenaria* is very easy, and is best done from seed, sown in August and September, as soon as ripe. The method commonly adopted in Europe, is to put rows of brushwood or sods across the sand in different directions, in order to retain the sand a little, that it should not blow from the seed. On each side plant a row of *Arundo arenaria*, just as you would plant potatoes, placing a whole ear in each hole; the plants will grow very rapidly, and in a short time cover a large place. But on shifting sands of small extent, or where it is desirable to plant shrubs and trees, in order to fix a border or bank, even when very much exposed to high winds, several kinds are used, as the white birch (*Betula alba*,) dwarf birch (*Betula nana*,) gray willow (*Salix cinerea*,) European alder (*Alnus glutinosa*,) and *Alnus incana*; nothing, however, is better fit for this purpose than the sea buckthorn (*Hyppophæ rhamnoides*,) which, among the shrubs, takes the same rank as *Arundo arenaria* among grasses; and perhaps *Hippophæ canadensis* or *argentea*, the *Shephardia* or buffalo berry, as it is called here in some places, will do well too.

If any person wishes to plant larger growing trees, the silver poplar or abele (*Populus alba*,) or *nivea*, is preferable to all, I think, as it has very numerous strong spreading roots, and will stand the high winds perfectly well. It grows most rapidly, and is content with a poor soil.

Among ornamental shrubs, I always succeeded best in planting the common lilac (*Syringa vulgaris*,) *Rosa pimpernellifolia*, and the Scotch rose (*R. spinosissima*,) the broom (*Spartium scoparium*,) and furze (*Ulex europæus*.) I decidedly prefer fall planting, as the sand is more firm in autumn and winter than in spring; and even cuttings from poplars and willows will readily strike roots when planted at that time.

Perhaps there may be some of your correspondents who know less of this matter than yourself, and to whom they will be useful; and I hope you will receive these hints as a poor reward for what I have already learned from your journal.

As I am a foreigner, only for a few months acquainted with your language, I hope you will kindly excuse my un-English style, and, as my whole life has been devoted to the study of botany and gardening for at least 25 years, and as in the profession of horticulture I have travelled over a great part of Europe, I hope to have been able to gather some experience, which I shall be glad to relate to you, as soon as I can explain my ideas better in your language. R. Nelson. *Indian Hill, near Newburyport, Mass. Feb* 27, 1847.

[Mr. Nelson's remarks are interesting to *railroad companies* who are troubled with sliding sand-banks in "deep cuts," as well as to those residing on the sea-side.—Ed.]

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N. Y. State Agricultural Society.—At a meeting of the State Ag. Society at Albany, March 11, 1847, the president in the chair, the following resolution was adopted for the government of the committees on fruit:

Resolved, That the work entitled "The Fruits and Fruit Trees of America" by A. J. Downing, be *the established authority* of the N. Y. S. Ag. Society, in classifying the varieties and nomenclature of fruits in our future exhibitions.

A. J. Downing, of Newburgh, and J. W. Bissell, of Rochester, were added to the committee on fruit appointed under the resolution of last year, and continued at the last annual meeting. The other members of the committee are, Lewis F. Allen, of Buffalo, chairman; Hon. Samuel Young, of Saratoga; and Dr. Herman Wendell, of Albany.

The president stated that he had, in company with the Secretary, visited Saratoga Springs, at the request of gentlemen of that place, and had examined various locations proposed for the show-grounds of the Fair in September; that several of these were in the highest degree eligible; and that advice had been given to the members of the executive committee there as to the location which was most desirable.

The secretary reported the Premium List, as published, and was authorized to procure two hundred and fifty copies of the same for distribution.—The amount of cash premiums, $3,004; 131 volumes of agricultural works; 65 volumes Transactions; 59 diplomas, and 15 silver medals; amounting in all to $3,472.

The secretary reported that he had received returns from 39 county societies, and that their reports were, in many cases, of very great interest, and that all reports received had been prepared for the Transactions. Only seven societies from which reports had not been received; and that he was in

correspondence with the officers of these societies, and expected returns from them all. Only 12 counties in the state in which there are not organized societies.

From these reports it appears, that in 19 counties the yield of Indian corn exceeds 80 bushels to the acre. In 11 counties crops are reported exceeding 100 bushels. The largest yield in

Cortland	county, of	154	bushels,
Oswego	"	146⅞	"
Orange	"	139	"
Tioga	"	125	"
Oneida	"	123⅓	"

The largest yield of wheat is from Ontario, fraction short of 60 bush. per acre, on upwards of 3 acres.

In eight counties the yield of oats exceeded 70 bushels per acre. The largest yield, 102 bushels, in Oneida. B. P. JOHNSON, *Sec'ry.*

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ERRATA.—Our printer's devil, who we imagine composes while standing on his head—after the manner of Quilp's boy—took the liberty of reversing the position of two cuts in our last number—the *Double Crimson Currant*, and the *Silver Bell*, so that the clusters of blossoms hang *up* instead of *down*. If he will oblige us by endeavoring to hang himself by "a slender peduncle," in the same position, he will discover the vital value of the law of gravitation.

MASSACHUSETTS HORTICULTURAL SOCIETY.

PREMIUM LIST FOR 1847—(CONCLUDED FROM P. 440.)

PREMIUMS FOR PLANTS, FLOWERS AND DESIGNS.

DISPLAY OF GREEN HOUSE PLANTS IN POTS THROUGH THE SEASON.

For the best display of Green House Plants in pots through the season, the Appleton Gold Medal, valued at..... $10 00

For the 2d best display of do., the Society's Silver Gilt Medal, valued at..... 15 00

Provided, however, That whatever amount may be awarded during the season for the exhibition of Pot Plants, to the person who shall be entitled to said medals, shall be deemed as constituting a part of their value.

DISPLAY OF GREEN HOUSE PLANTS IN POTS.

To be exhibited at the opening of the hall, on the first Saturday in May.

PELARGONIUMS.—*Class I.*—For the best six new and rare varieties, grown in six inch pots,..... $6 00
For the 2d best do.,..... 4 00
Class II.—For the best six varieties of any sort, grown in large pots..... 6 00
For the 2d best do.,..... 4 00

ROSES.—For the best six varieties of Tea, Bourbon, Noisette, or Bengal,..... 6 00
For the 2d best do.,..... 4 00
For the 3d best do.,..... 2 00

CUT FLOWERS.—For the best display,..... 3 00
For the 2d best do.,..... 2 00

FUCHSIAS.—For the best six varieties,..... 6 00
For the 2d best do.,..... 4 00

CACTUS.—For the best six varieties,..... 3 00
For the 2d best do.,..... 2 00

CALCEOLARIAS.—For the best six varieties,..... 3 00
For the 2d best do.,..... 2 00

CINERARIAS.—For the best six varieties,..... 3 00
For the 2d best do.,..... 2 00

HEATHS.—For the best varieties,..... 3 00
For the 2d best do.,..... 2 00

VARIOUS SORTS.—For the best display of various sorts of Green House Plants, not less than twelve pots,.. 8 00
For the 2d best display,..... 5 00

HYACINTHS.—To be awarded second Saturday in May.
For the best display, not less than twenty varieties,. 5 00
For the 2d best do.,..... 3 00

TULIPS.—To be awarded the third Saturday in May.
For the best thirty distinct varieties,..... 8 00
For the 2d best do.,..... 6 00
For the 3d best do.,..... 3 00

PANSIES.—To be awarded the fourth Saturday in May.
For the best twelve distinct varieties,..... 4 00
For the 2d best do.,..... $3 00
For the 3d best do.,..... 2 00

HAWTHORNS.—To be awarded the fourth Saturday in May.
For the best display,..... $3 00
For the 2d best do.,..... 2 00

HARDY AZALEAS.—To be awarded fourth Saturday in May.
For the best display,..... $3 00
For the 2d best do.,..... 2 00

SHRUBBY PÆONIES.—To be awarded fourth Saturday in May.
For the best six varieties,..... $5 00
For the 2d best do.,..... 4 00
For the best display,..... 3 00

HERBACEOUS PÆONIES.—To be awarded 2d Saturday in June.
For the best twelve flowers, having regard to the number of varieties,..... $5 00
For the 2d best do.,..... 4 00
For the best display,..... 3 00

PINKS.—To be awarded third Saturday in June.
For the best six distinct varieties,..... 4 00
For the 2d best do.,..... 3 00
For the best display,..... 2 00

RANUNCULUS.—To be awarded in June.
For the best display,..... 5 00
For the 2d best do.,..... 3 00

ANEMONES.—To be awarded in June.
For the best display,..... 5 00
For the 2d best do.,..... 3 00

HARDY ROSES.—To be awarded third Saturday in June.
Class I.—For the best thirty distinct varieties,..... 8 00
For the 2d best do.,..... 6 00
For the 3d best do.,..... 4 00
For the best display,..... 3 00
Class II.—For the best twelve distinct varieties,.. 5 00
For the 2d best do.,..... 3 00
For the 3d best do.,..... 2 00
Class III.—HARDY PERPETUAL ROSES.—For the best ten varieties,..... 5 00
For the 2d best do.,..... 4 00
For the best display,..... 3 00

PRAIRIE ROSES.—For the best display,..... 4 00
For the 2d best do.,..... 3 00

CARNATION AND PICOTEE PINKS.—To be awarded third Saturday in July.
For the best ten varieties,..... $5 00
For the 2d best do.,..... 4 00
For the best display,..... 3 00

MAGNOLIAS.—For the best display through the season, 3 00
For the 2d best do.,..... 2 00

HARDY RHODODENDRONS.—For the best display of the season..... 3 00
For the 2d best do.,..... 2 00

DOUBLE HOLLYHOCKS.—To be awarded third Saturday in July.
For the best display,..... $3 00

For the 2d best do ,... ..... 2 00
For the 3d best do.,.. ..... 1 00

DOUBLE BALSAMS.—To be awarded second Saturday in August.
For the best display,..... $3 00
For the 2d best do.,..... 2 00
For the 3d best do.,..... 1 00

PHLOXES.—To be awarded third Saturday in August.
For the best ten distinct varieties,..... 6 00
For the 2d best do.,..... 4 00
For the 3d best do.,..... 3 00

GERMAN ASTERS.—To be awarded second Saturday in September.
For the best display,..... $4 00
For the 2d best do.,..... 3 00
For the 3d best do.,..... 2 00

BOUQUETS, WREATHS, DESIGNS, &c.

Premiums to be awarded at the Annual Exhibition.

VASE BOUQUETS.—For the best pair suitable for the Bradlee vases, ... $10 00
For the 2d best do.,..... 6 00
For the best pair for the Society's marble vases,.... 10 00
For the 2d best do.,..... 6 00

PARLOR BOUQUETS.—For the best pair suitable for the parlor, ... 5 00
For the 2d best do.,..... 3 00
For the 3d best do 2 00

HAND BOUQUETS.—For the best pair,..... 3 00
For the 2d best do ,..... 2 00
For the 3d best do.,..... 1 00

GRASS BOUQUETS.—For the best composed of grass,... 3 00
For the 2d best do.,..... 2 00

BOUQUETS COMPOSED OF INDIGENOUS FLOWERS.—For the best, ... 3 00
For the 2d do ,..... 2 00

MOSS VASES, BASKETS OF FLOWERS, or any other neat, appropriate designs, suitable for the occasion.—For the best,..... 12 00
For the 2d best do.,..... 8 00
For the 3d do.,..... 6 00
For the 4th do.,..... 5 00

WREATHS.—For the best, not less than thirty feet in length,..... 10 00
For the 2d best do.,..... 5 00
For the 3d best do.,..... 3 00

DAHLIAS.—To be awarded fourth Saturday in September.
Division A.—Premier Prize.—For the best twelve dissimilar blooms, the Society's Silver Medal,..... $5 00
Specimen Bloom.—For the best flower,..... 3 00
Various Colors.—For the best yellow, buff or orange; purple or maroon; crimson or claret; very dark; white; edged or tipped; scarlet; pink or rose; a premium of $1 each,..... 8 00
Division B.—Class I.—For the best twenty-four dissimilar blooms,..... 8 00
For the 2d best do.,..... 5 00
Class II.—For the best eighteen dissimilar blooms, 6 00
For the 2d best do.,..... 4 00
Class III.—For the best twelve dissimilar blooms, 5 00
For the 2d best do.,..... 3 00

CHRYSANTHEMUMS.—To be awarded Nov. 13.
For the best twelve distinct varieties, in trusses,.... 3 00
For the 2d best do.,..... 2 00

HERBACEOUS PERENNIALS.—For the best display through the season, the Society's Silver Medal, ... 5 00
For the 2d best do,..... 4 00
For the 3d best do..... 3 00

ANNUALS.—For the best display through the season, the Society's Silver Medal,..... 5 00
For the 2d best display,..... 4 00
For the 3d best do.,..... 3 00

INDIGENOUS PLANTS.—For the best display of the season, ... 3 00
For the 2d best do.,..... 2 00

CAMELLIAS.—To be awarded second Saturday in February.
For the best twelve varieties of cut flowers, with foliage,..... $8 00
For the 2d best do.,..... 5 00

CHINESE PRIMROSE.—To be awarded second Saturday in February
For the best six varieties in pots,..... $3 00
For the 2d best do.,..... 2 00

GREEN-HOUSE AZALEAS.—To be awarded second Saturday in March.
For the best six varieties in pots,..... $6 00
For the 2d best do.,..... 4 00

PREMIUMS TO BE AWARDED AT THE WEEKLY EXHIBITIONS.

For the best six Pot Plants, of different varieties,... $2 00
For the 2d best do.,..... 1 00
For the best large Bouquet for vases or parlor, composed of flowers gracefully arranged,..... 2 00
For the 2d best do.,..... 1 00
For the best six hand Bouquets,..... 2 00
For the 2d best do.,..... 1 00

PREMIUMS FOR VEGETABLES.

ASPARAGUS.—For the earliest and best, not less than three bunches,..... $5 00

BEETS.—For the best, (pure blood beet,) during the season, not less than twelve roots,..... 5 00

BROCCOLI.—For the best three heads,..... 5 00

BEANS.—For the best and earliest peck of string beans, 3 00
For the best and earliest Lima beans, not less than two quarts,..... 3 00
For the best and earliest variety of shell beans,..... 4 00

CUCUMBERS.—For the best pair under glass, previous to the first Saturday of June,..... 5 00
For the 2d best do..... 3 00
For the best and earliest, of open culture,..... 3 00

CAULIFLOWERS.—For the best and largest, during the season, not less than three heads,..... 5 00
For the 2d best do.,..... 3 00

CORN.—For the best and earliest sweet corn, not less than twelve ears,..... 3 00

CABBAGE.—For the best drumhead cabbage, during the season, not less than three heads,..... 5 00
For the 2d best do.,..... 3 00
For the best Savoy cabbage, during the season, not less than three heads,..... 3 00
For the 2d best do ,..... 2 00

EGG PLANTS.—For the best display during the season,. 5 00

LETTUCE.—For the best six heads, before the 1st Saturday in July,..... 3 00

POTATOES.—For the best *new* seedling, of superior quality, for the table,..... 10 00
For the best and earliest peck, previous to Aug. 1,.. 3 00

PEAS.—For the best and earliest peck in June,..... 3 00

RHUBARB.—For the largest and best, previous to the first Saturday in July, not less than twelve stalks,.. 5 00

SQUASHES.—For the best pure Canada squashes, not less than six in number,..... 5 00
For the greatest variety exhibited during the season, 5 00

TOMATOES.—For the best and earliest, not less than one dozen,..... 5 00

VEGETABLES.—For the best display and greatest variety at the weekly exhibitions, during the season,.. 10 00
For the 2d best do ,..... 5 00
For the best display and greatest variety at the annual exhibition,..... 10 00
For the 2d best do.,..... 5 00
For any new variety of vegetables suitable for the table, and worthy of cultivation, other than seedling potatoes,..... 6 00

CELERY.—For the best and largest blanched, not less than six roots,..... 5 00
For the 2d best do.,..... 3 00

For the Committee to establish premiums,
S. WALKER, Chairman.

RULES AND REGULATIONS.

1. If, at any meeting, the Committees for awarding premiums, shall be of opinion that the time assigned in the Premium List, for the exhibition of any Fruits, Flowers, or Vegetables, will be too early or too late, they shall have power to alter the time of exhibition, giving seasonable notice thereof to the Society at the time of such change.

2. All Fruits, Flowers and Vegetables, *placed in competition for premiums*, are to be the growth of the competitors.

3. *All articles exhibited for premium* must be placed in the Stands by 11 o'clock, A. M., and no production in the Fruit

Flower or Vegetable Department, will be admitted *for premium* after that time. This rule will be strictly adhered to.

4. All articles exhibited shall remain in the Hall until two o'clock, P. M., when they will be delivered to the contributors, unless otherwise directed.

5. No premiums on Fruits are to be awarded, unless specimens (if desired) of the same shall have been presented to the Committee, to enable them to judge of the quality.

6. Committees shall have the discretionary power of withholding premiums, if, in their opinion, the articles exhibited do not merit them.

7. In awarding premiums on plants in pots, special reference will be had to the beauty of the specimens, profusion of bloom, and evidence of superior cultivation. Inferior specimens will be excluded by the judges from competition.

8. Gratuities will be awarded by the Committees for any new or rare Fruits, Flowers, Plants, or any other object of particular interest, and for which no special premium has been offered. Flowers attached to a plain surface by any method, will not be considered bouquets, but will be specified as designs.

9. When specimens are presented for a name, the owner is requested to give all the information in his possession as to the origin, and the name by which they have usually been known.

10. When the Committee have good reason to believe that any information has been withheld, as to the name of specimens, they will decline to give their opinion. They are ready at all times to aid and assist, to the utmost of their ability, in ascertaining the true name of any new production presented under these regulations, but not otherwise.

11. The contributors of Fruits for exhibition or premium, are recommended to present the same in the dishes or baskets of the society, or in NEW boxes of their own.

12. The Committees are authorized, and requested, to remove all ordinary specimens from the table.

13. No Flower, Fruit, or Vegetable, will be considered as deserving a premium, unless it possesses points of superior excellence; and no object for which a premium has been awarded, will be entitled to another during the season—(the Special Prize List of Fruits excepted.)

14. It is also required that the Fruits, Flowers and Vegetables exhibited, should be accompanied by brief observations on the mode of cultivation, *if peculiar*, together with any other remarks of utility.

15. Any person to whom a premium or gratuity has been awarded, whether in money, medals or plate, may receive either, of like valuation, at his option.

16. The regulations of the Society, forbidding the handling of Fruits, Flowers, &c., will be strictly adhered to.

17. No person allowed to be in the Hall while the Committee are awarding the premiums.

☞The foregoing, having received the approval of the Executive Committee, and the regulations confirmed by a vote of the Society, is now published as the list of premiums for the current year.

MARSHALL P. WILDER, *President.*
E. C. R. WALKER, *Recording Secretary.*
Boston, Feb. 1, 1847.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The monthly meeting for March, was held on Tuesday evening the 16th, in the grand saloon of the Philadelphia Museum Building, the President in the chair.

The display was remarkably fine, considering the frostiness of the weather; the profuse bloom of a number of the finest specimens of Azaleas and Camellias, were destroyed by its severity. The President's gardener exhibited a beautiful collection of plants—Azaleas, Rhododendrons, Camellia rosa-sinensis, etc.; also, handsome baskets of cut flowers. Mr. Buist, a fine collection of Azaleas, Heaths, Acacias, etc. Peter Raabe, a number of Camellias, among which a very large and fine plant of the double white; also, a beautiful urn of cut flowers. Robert Kilvington, an interesting collection of indigenous plants in flower and bouquets. Very splendid displays of cut Camellias, were shown by Peter Makenzie, Andrew Dryburgh, and John Sherwood. Anthony Felton presented two large collections of full grown vegetables.

Premiums were awarded as follows:

For the best Rhododendrons in pots, three specimens, to Wm. Hall, gardener to Caleb Cope; for the best Azaleas, six specimens, to the same; for the best and most interestiug collection of plants in pots, to Robert Buist; for the second best, to Peter Raabe; for the third best, to Robert Kilvington; and the fourth best, to Benjamin Galliss, gardener to Jacob Snider, jr. For the best display of Indigenous plants in flower in pots, to Robert Kilvington. For the best Boquet, to Peter Raabe; for the second best, to Patrick Gallagher, gardener to Miss Gratz. For the best and second best Basket, to Wm. Hall, gardener to the President.

For the most interesting and next most interesting displays of Vegetables, to Anthony Felton.

The President announced that he had received a communication, which was read, from Gen Patterson, the first Vice-President, dated from Tampico, purporting that he had forwarded a package containing Air plants, Cacti, etc., as a present to the Society; which had been received and distributed by the appropriate Committee.

Ordered, That the communication be entered in the minutes, and the thanks of the Society be tendered for the acceptable gift.

The Library Committee reported that Robert Buist had presented a copy of the second edition of his Treatise on the Culture of the Rose, to the Society.

Ordered, That the thanks be presented to the donor.

Honorary Members Elected—Marshall P. Wilder, President of the Massachusetts Horticultural Society; J. P. Cushing, Watertown, and B. V. French, Braintree, Mass.

THOMAS P. JAMES, *Rec. Sec.*

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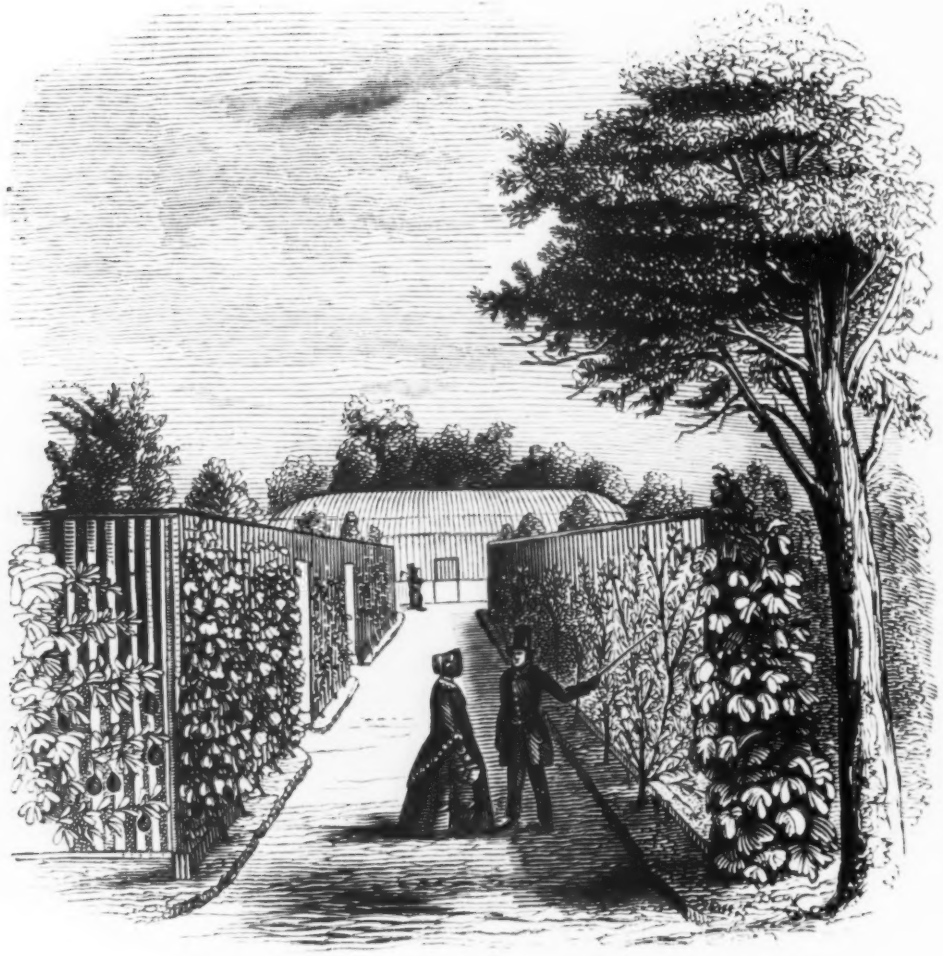

THE ESPALIER WALK IN THE FRUIT GARDEN AT WODENETHE.

THE RESIDENCE OF H. W. SARGENT, ESQ.

[Horticulturist, May 1847.